Primer on Air Cleaning . . . . . Pg. 19

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G-E Extends Cooling Line, Drops Prices, Adds Premium Incentives

MIAMI BEACH, Fla.—An expanded line of products, price reductions throughout the line, new "premium" incentives for buyers, a variety of new promotion plans and methods, and a continued emphasis on the importance of product services are the key elements in the General Electric Air Conditioning Dept.'s program on central-type air conditioning systems for 1961.

Included in the new products are 8-ton and 10-ton systems in both the "Weathertron" heat pump line and in conventional air-cooled models; a new upflow-downflow air handler for 2½-ton and 3-ton systems; and a new "Air Wall" irradiation system in which an ultraviolet lamp is pre-mounted in an "Air Wall" register for the purpose of bacteria reduction and odor oxidation.

The 8-ton and 10-ton units will be ready for delivery to distributors before the cooling sales season opens next year, and the other products will be available early in the start of the new year.

In his talk to distributors assembled in convention here, Ben Ramsdell, manager-marketing for the G-E Air Conditioning Dept. central systems division, declared that the new products plus the promotion programs outlined for 1961 should not only strengthen G-E's hand in the year-round residential air conditioning field, but should permit greater invasion of the commercial and industrial markets.

With reference to the industrial market, Ramsdell pointed to the recent installation of 20 5-ton G-E heat pumps in a Florida manufacturing plant and of 126 tons of packaged units in a women's undergarment producing facility in the Carolinas as examples of the kind of industrial market

(Continued on Page 35, Col. 1)

Selling-Producing Blur Worries NHAW

By Phil B. Redeker and Frank J. Versagi

DETROIT—"Is the firm that is primarily a wholesaler going to produce more of the products it handles: is the firm which is essentially a manufacturing concern going to do more wholesaling?"

These questions were posed during the 14th annual international convention of Northamerican Heating & Air-conditioning Wholesalers Association.

"Our business is at something of a crossroads as to its future direction," declared Harold Squire, Tiffin, Ohio, outgoing president of NHAW.

Air conditioning came in for a major share of the convention's discussion; "It seems certain that refrigerants will become more available to us," was the thought that generated most interest.

Great interest was also generated by a brainstorming session. Devoted to the building of better dealer organizations, the session resulted in many directly opposed opinions. One group pleaded for making the dealer a "part of the team."

"No!" insisted another. "Keep the dealer as far away as possible from the manufacturer."

During the convention several committees held meetings, then reported to the members.

The committee on air conditioning, for example, offered these conclusions through its chairman Bob Allen, Atlas Supply Co., Winston-Salem, N. C.:

"By what is essentially a process of attrition, more and more cooling components are becoming available to NHAW members. As manufacturers realize that we offer a significant market, they will sell us."

Cited as an example was one company now offering charging

(Continued on Page 25, Col. 1)

Hi-Press Buys Drayer-Hanson

NEW YORK CITY—Hi-Press Air Conditioning of America, Inc., will acquire the assets of the Drayer-Hanson Div. of the Crane Co. under terms of an agreement approved by both companies and effective Dec. 15, 1960, S. W. Brown, president of Hi-Press, announced recently.

"The Drayer-Hanson Div., with its headquarters and plant in Los Angeles, is one of the nation's leading manufacturers of low-side air conditioning components and also produces a line of refrigeration, heating, and heat transfer equipment," it was pointed out.

"Established a half a century ago, Drayer-Hanson has its major marketing areas in the southern and western states, and its annual gross volume over the past several years has run as high as $4 million."

Drayer-Hanson was acquired by the Crane Co. when it purchased the assets of National-U.S. Radiator Co. early this year.

Hi-Press designs and manufactures what it describes as "an advanced system of noiseless and draftless air condition-

(Continued on Page 4, Col. 5)

Unions Voted Out at Recold, Strike Ends

LOS ANGELES — A 233-day strike against Recold Corp. came to an end Dec. 1 when the National Labor Relations Board announced that Recold employes had voted out of the plant the three unions that formerly represented company workers.

The strike, which may have been the longest against any firm in the air conditioning and refrigeration industry, was called last April 10 after negotiations over a wage increase had broken down.

The three unions involved were the United Auto Workers, the International Association of Machinists, and the Teamsters.

In decertifying the three unions as bargaining representatives for Recold employes, the

(Continued on Page 4, Col. 1)

Riggin, Jr. Elected Mueller Brass Pres.

PORT HURON, Mich. — The election of Fred L. Riggin, Jr., executive vice president of Mueller Brass Co., to the post of president and chief executive officer was announced by the company's board of directors.

Riggin succeeds his father, Fred L. Riggin, Sr., one of the founders of the company, who has been elected chairman of the board, a new position which will keep him active in company affairs.

The election of Riggin, Jr.

(Continued on Back Page, Col. 1)

Bid Procedure In Final Phases

LOS ANGELES—The organized construction industry here is planning to start operation of its new bid procedure on the tentative date of Feb. 1.

The agreement, and the rules and regulations, have been submitted to the Attorney General of the United States in Washington, D. C., after conference with attorneys of the Federal anti-trust office here.

They were also submitted to the attorney general of the state of California. Assistant attorney general Wallace E. Howland, leader of the state justice department's anti-trust section,

(Continued on Back Page, Col. 1)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

How To Save a Year

Throughout this waning year the NEWS has been plugging—in editorials, "Dopes," and feature articles—for a revolution in higher education's time schedules.

We've pointed out that nine-month, two-semester school terms are obsolete. No longer is Sonny needed to gather in the sheaves (down on the farm) during the good ole summertime. Nor does teen-age Nancy have to can the peach crop.

So, why does our nation's enormous investment in school "plant" remain idle during the summer months? Why are teachers underpaid? Why must taxpayers be bled blue to build more and more school buildings?

Answer: all three problems could be solved by the trimester concept — which, incidentally, is made possible by air conditioning—of all year 'round education.

The trimester idea, enables students to graduate in three years instead of four, adds substantially to teacher income, and could save taxpayer dollars by the billion.

Another Blow for Freedom

We're happy, therefore, to announce that this editorial campaign already has paid off on home grouds.

Michigan State University (Oakland branch) is adopting whole-hog the trimester idea. (Subscribers may recall that Michigan State's progressive President, John Hannah, wrote an approving letter to the NEWS after reading one of our

(Continued on Page 10, Col. 1)

Financing Installations Hot Topic At NCRSA Conclave In New Orleans

By George M. Hanning

NEW ORLEANS—Of all the problems of selling successfully in a changing market discussed at the 14th annual convention of the National Commercial Refrigerator Sales Association here, financing supermarket installations sparked the most interest.

John Schwegmann, Jr., who does a $53 million volume in three supermarkets here, started the ball rolling when he cried out against what he called "exorbitant" contract interest as a deterrent to more independent operators getting into the food field.

Dudley Cawthon, newly-elected president of NCRSA, finished it at the final session with a warning to distributors to get 25% down on packaged supermarket installations, excluding plumbing and electrical work that becomes part of the real estate, in order to protect themselves against repossession losses.

Round table discussions brought out that five year financing terms, which used to be the exception, have now become an accepted fact on larger jobs. Contract interest rates vary greatly around the country. Distributors are pushing for, and many are getting, repurchase agreements from other suppliers participating in package deals.

They are also seeking a greater share of interest income

(Continued on Page 28, Col. 1)

See Big Chiller Sales Growing 15% A Year

SYRACUSE, N. Y.—An increase of 15% annually for the next five years in industry sales of large-capacity refrigeration machines for use with air conditioning systems was forecast recently by Russell Gray, president of Carrier Air Conditioning Co.

The Carrier executive noted that his company has sold more than 5,000 centrifugal chillers valued at more than $250,000,000 since it built the first one 38 years ago.

Over this period, industrial installations accounted for 43.6% of the total and office building installations made up another 36.9%. Other important markets have included department stores, hospitals, hotels, and theaters, he said.

Carrier also expects to build its 2,000th heat-activated absorption refrigerating machine early in 1961, Gray said.

Gray said a growing awareness among plant managers of the benefits of factory air conditioning and increased interest among educators in air conditioned schools are expected to stimulate the sale of big chillers with cooling capacities above 100 tons.

He said the sale of big refrigeration equipment to elementary and secondary schools could amount to $20,000,000 by 1965.

Goddard & Goddard Buys Taylor-Burch

DETROIT — E. A. Goddard, president of Goddard & Goddard Co. here, announced that on Dec. 1, the company purchased Taylor-Burch Refrigeration Products, Inc. of Jackson, Mich.

Taylor-Burch produces packaged closed-space commercial refrigeration units. These units are used for freezing, cooling, and cold holding of foods and other perishable products in walk-in and reach-in refrigerators. Operations will be continued at the present location.

Goddard manufactures tools and metal cutting equipment.

The transaction "will in no way affect the operation of Goddard & Goddard Co. in any of its other plants," the announcement said. "It is a move toward the further growth of the company by diversification."

Tuck-Aire Introduces New Line of All-Electric Furnaces to 68,240 Btu

SAN FRANCISCO — A complete line of all-electric furnaces in capacities from 17,060 through 68,240 Btu output rating has been announced by Tuck-Aire Furnace Co. here.

The company said the deluxe CFBE 18 counterflo series and TABE 18 upflo units were developed after intensive research by its engineering department.

Pre-wired electric heat elements are factory furnished in 5-kw banks. Heaters are designed to be operated by a single or two-stage 24-volt thermostat. Squirrel-cage blower, mounted on slideout drawer assembly for easy service accessibility, is available with a two-speed motor providing air deliveries of 900 cfm on heating and 1,200 cfm for air conditioning applications, it was stated.

All units have die-formed, heavy metal cabinets with rounded corners, finished in a two-tone baked enamel.

Chicago Utility Cuts Electric Rate For Space Heaters

CHICAGO — A reduction in charges for electric space heating was placed in effect recently by Commonwealth Edison Co.

Under one rate revision authorized by the Illinois Commerce Commission, a new low rate step of 1.6 cents per kilowatt-hour will be available to residential customers whose space heating facilities are exclusively electric. Formerly the lowest charge for such customers was 1.75 cents per kilowatt-hour.

At the same time the utility reduced from 1.75 cents to 1.6 cents the maximum average kilowatt-hour charge for commercial, industrial, and governmental electric space heating.

The new low step of 1.6 cents is about 29% below the utility's lowest kilowatt-hour charge for general household uses of electricity. It is expected to stimulate further growth of electric house heating in this area.

The revised electric heating rates, like all rates of the utility, are subject to a fuel adjustment clause.

Tell Silver Shield Story to Cleveland Contractors Dec. 15

CLEVELAND—At a meeting scheduled for Thursday evening, Dec. 15, at the Cleveland Engineering Society Auditorium, heating and air conditioning dealer-contractors from the Greater Cleveland marketing area will get the full story of the Silver Shield concept.

Silver Shield is the name given to a promotion and organizing program developed by the National Warm Air Heating & Air Conditioning Association of Cleveland.

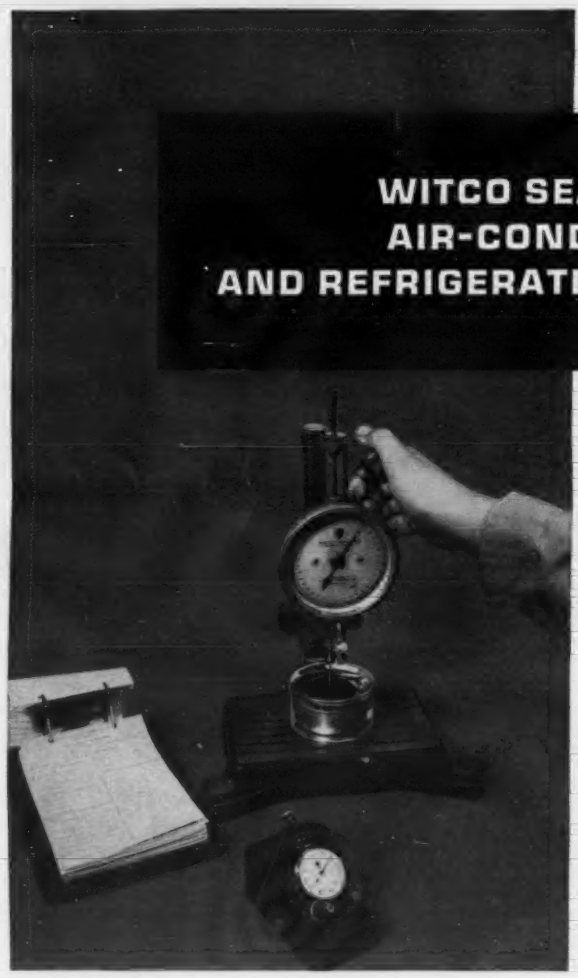
Cooperating with the national association is a Cleveland Silver Shield Activity Committee, consisting of:

Wm. Fingerhut, Wm. Fingerhut & Son; Mannie Sheftel, Union Square Heating & A/C; David Gore, Home & Industrial Heating; Gordon Justen, Domestic Sheet Metal Co.; David Knight, The Passov Sheet Metal & Heating.

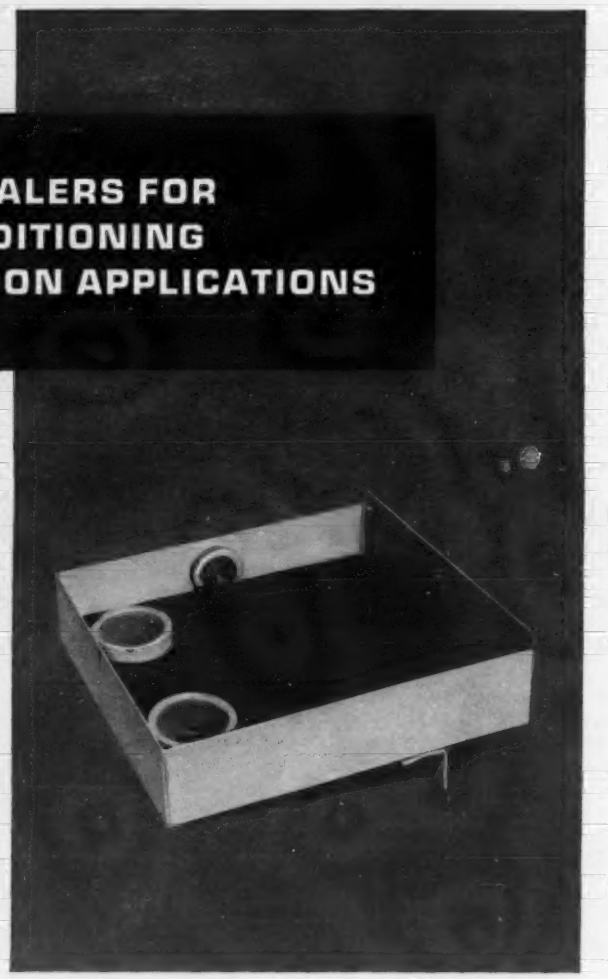
Louis K. Berman Dies

NEW YORK CITY—Louis K. Berman, 74, chairman of the board of Raisler Corp., died Nov. 30 in Mount Sinai hospital after a brief illness. He had been associated with the air conditioning, heating, and plumbing contracting firm since 1910 and was president from 1930 to 1956.

WITCO SEALERS FOR AIR-CONDITIONING AND REFRIGERATION APPLICATIONS



Careful testing of all Witco products means uniformity and high quality for you. Here, a lab technician checks a sealer with a penetrometer. This and many other tests check every characteristic that is vital to performance. Every sealer shipped must meet Witco's high standards and perform faultlessly for you.



Witco's sealers and vapor barriers are specially designed for air-conditioning and refrigerating applications. Good flexibility and excellent adhesion are exhibited over a wide temperature range (from below freezing to abnormally hot temperatures). Formulations to meet special application requirements are manufactured to customer order.

WITCO PRODUCTS ASSURE TOP QUALITY AND PERFORMANCE

Providing products especially suited to particular jobs is just one way Witco assures top performance. Take Witco's Plastic Sealer 320, for example. This material is an all-purpose sealer used where hard, dry films are required. It is stainless, tasteless, odorless and forms air-tight, positive seals.

Pioneer 14442 is a hot-applied sealer with odor level and moisture resistance that make it ideal for refrigerators, freezers, food-vending machines and water coolers. Pioneer 2205 also can be used in these applications. It is a high-melting-point sealer and retains high cold flow and flexibility at low freezing temperatures; it also assures good adhesion and excellent sealability.

The big reasons behind Witco Products' superiority are research and quality control. Every Witco Product is produced under the kind of strict laboratory quality control that assures uniformly high performance from shipment to shipment, year to year.

Witco's research laboratories and technicians not only develop new and improved products, but are available to help you with special problems. Write or call the nearest Witco sales office listed below for further information about these products and for information on sealers for other specialty applications.

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PIONEER PRODUCTS DIVISION
Dept. 84-03, 122 East 42nd Street, New York 17, N. Y.
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V 115/208-230 PH 1
RPM 1725 CODE K
2195
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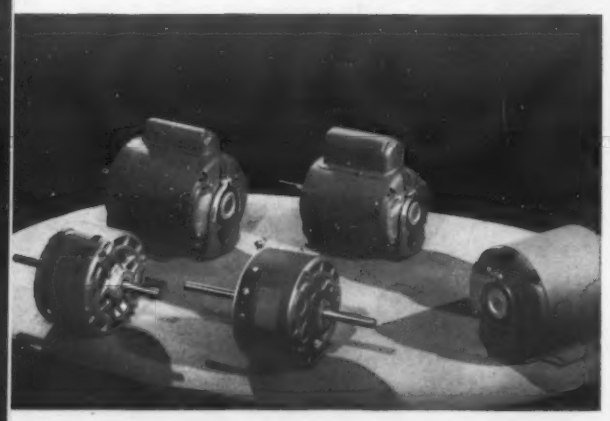
TEMP RISE 40 C SF
TIME RATING CONT.
SER NO UTL
FORT WAYNE, IN
LUBRICATION
AFTER 3 YRS NORMAL OR 1 YR HEAVY DUTY SERVICE ADD OIL ANNUALLY. NO RE-OILING NORMALLY REQUIRED FOR LIGHT DUTY WITH TOTAL OPERATING TIME UNDER 5,000 HRS. USE ELECTRIC OR OR SAE 10 OIL.
NOT OVER OIL.
TO DISASSEMBLE OR REMOVE BEARING CAP ON TERMINAL THEN REMOVE SHAFT BY RELEASING TAB.

A MOTOR IS A MOTOR IS A MOTOR IS A MOTOR IS A MOTOR IS A MOTOR

A MOTOR IS A MOTOR EXCEPT...

A MOTOR IS A MOTOR IS A MOTOR IS A MOTOR IS A MOTOR IS A MOTOR

You get MORE THAN A MOTOR when you buy General Electric fhp motors



Select your motor needs from General Electric's complete line, specifically designed for belt- or direct-drive applications. Premium quality General Electric fractional-hp motors build customer satisfaction and help increase your sales.

Here's why: Everyone thinks of motors as commonplace machinery and many say "they're practically all alike" . . . a motor is a motor. But, when extra-value features are added . . . features that cut installation and maintenance time and give more reliable service . . . you get more than a motor!

For original equipment or for replacement, General Electric offers added values in its motors for your heating and air conditioning equipment. These features mean "premium quality" motors for your customers, giving top performance and satisfaction.

And when you add the importance to your business of General Electric's fast sample service and expert application aid . . . prompt delivery and complete line availability . . . you can see why you get MORE THAN A MOTOR when you buy G-E fhp motors.

For information or help on fhp motor application or replacement problems, call your General Electric Sales Office where a Form G motor expert is ready to serve you. Write for bulletins GEA-6424 and GEA-6533, General Electric Co., Section 738-03, Schenectady 5, New York.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Recold Strike Ends--

(Continued from Page 1, Col. 1)

NLRB ruled that employes hired by Recold to replace strikers were permanent employes of the company, according to Recold officials. Their votes were counted in the election held last Oct. 5.

As a result, UAW Local 509 was rejected by a vote of 249 to 144, the IAM by 33 to 20, and the Teamsters by 2 to 1.

UAW advised the company on Nov. 7 that the strike had been terminated. It removed its pickets at that time.

H. T. (Hy) Jarvis, Recold president, commented that "Recold has always enjoyed better than average relations with the unions which have represented our employes and has operated as a union shop since April, 1941.

"A very detailed analysis early this year proved that Recold could not further increase wages and benefits at this time without increasing prices and seriously jeopardizing our competitive position in the industry.

"The company could not and did not compromise its position even when faced with the prospect of a strike. We said 'no' and meant it."

Immediately after the plant was struck, Recold ordered all employes to return to work or be permanently replaced. Only 18 out of 253 workers answered the call.

The company then advertised for new workers to replace the strikers.

"Within 10 days we had interviewed over 1,200 qualified applicants, who were eager to go to work," Jarvis said. "By June 6, all positions were filled with permanent replacements."

After the plant was back in production, Recold requested an NLRB certification election.

In addition, the company obtained an injunction enjoining the strikers from mass picketing the plant. But despite the injunction, mass picketing continued, the company reported.

The company alleged that during the strike, the unions resorted to such forms of violence as making bomb threats to Recold, injuring employes and damaging their autos, and sabotaging Recold units both at the plant and at Los Angeles harbor.

Recold stated that the unions filed charges against the company for violating the California labor code and the National Labor Relations Act. The company said that charges under the state code have not been prosecuted and unfair labor practice charges were dismissed.

"A large percentage of the strikers have applied for reemployment," Jarvis declared. "Strikers are eligible for rehire without discrimination as job openings occur. However, under no circumstances will Recold discharge replacements in favor of striking employes.

"Even though Recold is now operating as a non-union shop, we are continuing our same high level of wages and benefits, including our profit sharing and retirement plan without reduction.

"Many improved methods have been adopted as a result of new people, new ideas, and closer supervision. New equipment has been installed and new plant facilities are complete and in use.

"Production is back to normal, and we are confidently predicting that our production per man hour will soon exceed our best pre-strike level," Jarvis concluded. "Recold is ready for its greatest year."

Jarvis paid tribute to the "wholehearted cooperation and encouragement of loyal friends, customers, and fellow employes" during the prolonged strike.

Songer Resigns Crane Presidency

CHICAGO — Resignation of Wesley A. Songer as president of Crane Co., effective Dec. 15, was announced by Thomas M. Evans, board chairman.

Songer, who will continue as a director, said he resigned to accept another position. He added that he would announce his plans later.

Songer was brought into Crane in June, 1959, by Evans, who had become chairman two months earlier in a major management shuffle. Songer was named executive vice president. Last December, he was elected president and chief administrative officer.

Crane Acquires Cochrane Corp.

NEW YORK CITY—Acquisition of Cochrane Corp., Philadelphia manufacturer of water-treating devices, deaerating heaters, and other special equipment, was announced by Crane Co.

Cochrane, with annual sales of over $10 million, has plants in Philadelphia and Pottstown, Pa., and operations in Canada, headquartered in Toronto. Crane purchased the company for between $1 million and $2 million in cash, it was reported.

Drayer-Hanson--

(Continued from Page 1, Col. 4)

ing employing small diameter piping for the high velocity distribution of the conditioned air."

Thomas M. Evans, chairman of the board of the Crane Co., and Brown were the signatories to the agreement, which has been approved by directors of both companies.

Brown said the purchase was an "all cash transaction." He stated Drayer-Hanson would continue to operate as a division and that its activities would be expanded to the eastern market.

He added that the activities of both organizations would also be coordinated with a view to a greater exploitation of the commercial and industrial markets for its products.

Incorporated late in 1956, Hi-Press has largely confined its sales activities to date to the marine field, but has been actively engaged in research and development work to apply the Hi-Press system to land projects such as hotels, motels, apartment buildings, office buildings, hospitals, plants, and factories.

The main Drayer-Hanson Div. plant in Los Angeles is a single level structure with 120,000 sq ft of space, situated on a property of approximately six acres.

We've Always done the Unusual

In a world of prosaic production, Viking never hesitated at doing the unusual to make the very finest thin wall copper tube. Its specialized techniques and exclusive methods plus a long list of customers who are the leading manufacturers of refrigeration and air conditioning equipment are regarded by most as potent proof of this fact. What is so unusual, then, if we add Rolls Royce to our facilities for service? Surely the car is worthy of carrying Viking tube!

VIKING copper tube co.
CLEVELAND 10, OHIO

The 1937 Phantom III, 12-cylinder Rolls Royce is a Classic. Formerly belonging to the Lord Mayor of Kingston-on-Hull, it is now in our service. Viking personnel, however, drive American made cars.

Vertical Ducts To Carry Cooling

Skyscraper's Air Conditioning To Be One Of Principal Exterior Design Highlights

LOS ANGELES—The cause of the air conditioning industry in its efforts to establish air conditioning systems as a necessary and integral part of building construction was given a hand up the ladder recently with the announcement of a new 35-story skyscraper to be built in downtown Los Angeles.

Instead of being relegated to its more normal function as an *interior* comfort feature, the air conditioning system is being utilized by the architects of the project as one of the principal design highlights in the structure's *exterior* appearance.

As designed by Charles Luckman Associates, planning-architecture-engineering firm of Los Angeles, the skyscraper will be known as the 333 West Sixth building. It will occupy more than an acre of land and will have a total area of 615,000 sq ft. It also will represent an investment in excess of $20 million.

Ducts Enhance Exterior

In considering the air conditioning, the architects incorporated a perimeter system with vertical distribution exposed and running the full height of the towering structure. Vertical aluminum ducts, dividing the spandrel panels on the exterior walls, serve the dual purpose of enhancing the aesthetic value as well as increasing the amount of usable floor space.

In an effort to learn more about this different type of architectural treatment, the Certified Refrigeration & Air Conditioning Foundation (CRAC) in Southern California approached the Luckman organization for an explanation of the project's air conditioning details.

The CRAC Foundation was put in touch with Charles Gable who, as the project architect, will be supervising the various development phases of the building.

High Velocity System To Minimize Duct Space

According to Gable, the proposed air conditioning will be a high velocity system to minimize the space requirements for the necessary ducts. The space required for duct distribution was an important influence on the architectural concept with respect to the height of the proposed structure.

"The distributions systems will be divided," described Gable, "so that they will feed down from the roof of the skyscraper, up and down from an intermediate level and up from the second floor. In addition to these systems a separate distribution system will be provided to handle the internal areas created by office layouts."

This concept, Gable emphasized, is not normally employed in California, for the climatic conditions do not warrant the expense. However, he added, in a structure of such magnitude, it is one of the most economical and efficient ways to combat the sun.

Protection from the sun will not be provided by any means other than the air conditioning facilities to be installed in the building. Sun protection, in this case, refers to reduction of heat transmission, for the occupants will use drapery or blinds to eliminate the glare on the interior of the building.

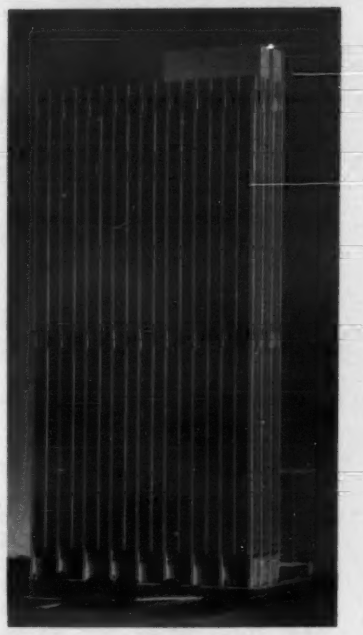
With the high velocity perimeter installation, the cooling required for each room will be obtained from a chilled water distribution technique, as well as a percentage of conditioned air supplied to each room from a central fan. This will be the "primary air" and will supply approximately one-third of the cooling required. Heating of the building also will be done with the primary air from heating coils located in the fan rooms.

"The remaining two-thirds of the cooling requirements will be handled by a room conditioning unit located near windows. The primary air is supplied in such a way that it induces the room air to flow through the unit eliminating the need of a fan and electrical wiring. As all outside air is from a central source, filters in each unit are not necessary.

"This eliminates a great percentage of maintenance costs, while allowing the use of electrostatic and carbon filters for the removal of dust and odors. The reduction of smog effect within the building is also a significant achievement," the project architect pointed out.

There are few moving parts in the room units and a sound absorber is provided to keep the noise level at a minimum. Room control can be either manual or automatic.

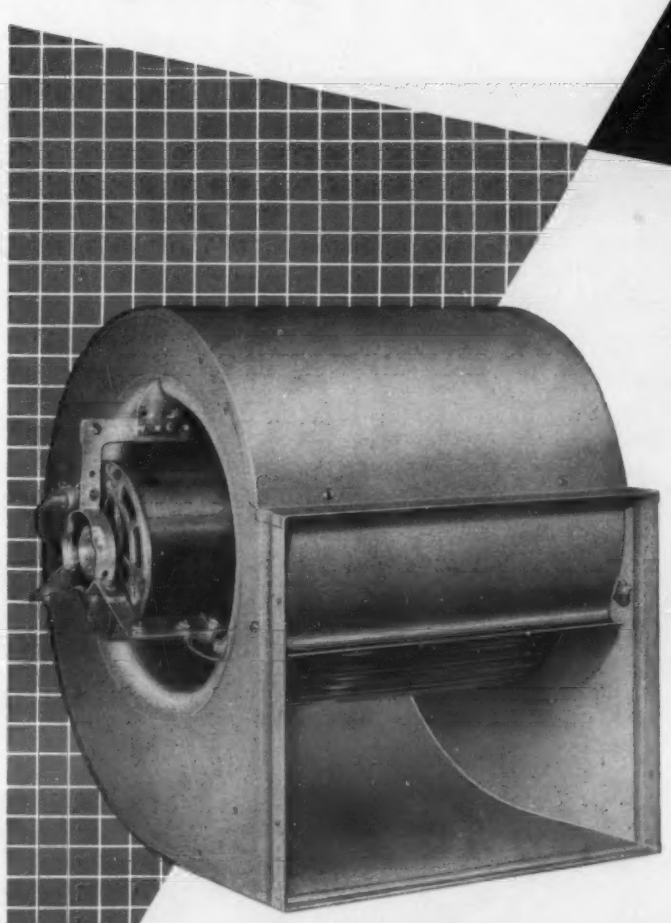
Average room temperatures will be maintained on a zone basis according to exposure with each building side controlled separately to compensate for sunlight and outside temperature effect. The occupant in the room can select the desired temperature and humidity control.



AIR CONDITIONING system played major role in the exterior design of skyscraper to be constructed in Los Angeles. A perimeter high velocity system with vertical aluminum ducts running the full height of the structure was selected. The ducts appear as alternate columns in photograph of the model of the building.

DIRECT DRIVE!

Another LAU "first in the Industry"



The Lau direct drive blower is designed for efficient operation in the smaller, more compact heating and air conditioning systems. This unit is especially practical where space is at a premium and lower component cost is desired.

Direct drive feature eliminates externally moving parts and results in a smaller, more compact unit having less vibration.

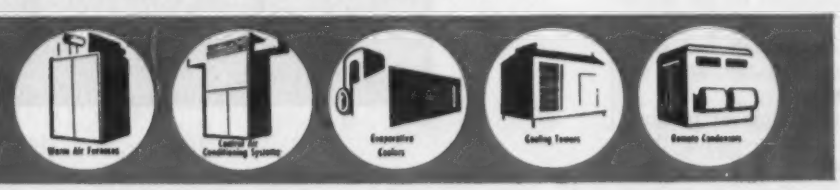
Lau direct drive blower assemblies are shipped ready for installation. Standard features include Lau-approved motor, thermo-overload protection, 30" motor leads, adjustable mounting brackets, oil tube extension and pre-punched housing for rapid installation. Available in a wide variety of C.F.M. ranges from 50 to 2490.

MEMBER NATIONAL WARM AIR HEATING AND AIR CONDITIONING ASSOCIATION INDOOR COMFORT

The Lau Blower Company, 2027 Home Avenue, Dayton 7, Ohio.

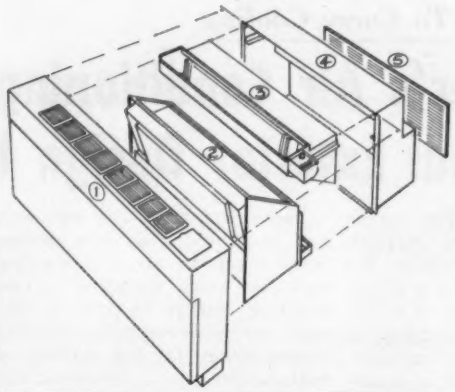
Other plants in Kitchener, Ont., Can., and Irwindale, Calif.

LAU World's Largest manufacturers of Air-Conditioning Blowers for



'Incremental System'

Guest Room Air Conditioning Independent Of Public Room System In 'All-Electric' Hotel



EXPLODED view of all-electric incremental conditioner as installed in all 163 guest rooms. (1) Room Cabinet; (2) Cooling Chassis; (3) Heater Section; (4) Wall Box; (5) Outdoor Louver.

135-Ton System Handles Public Room Cooling

SPACIOUS GUEST ROOM of Town House hotel, West Palm Beach, Fla., shows all-electric incremental conditioner at window featuring simplified single knob control which automatically provides either heating or cooling, as required to satisfy thermostat setting.

WEST PALM BEACH, Fla.—All-electric air conditioning is a feature of the new Town House, said to be the only major hotel to be built in Florida in 1960 and the largest "all-electric" hotel in the United States.

Architects for the 163-room, $3,000,000 deluxe hotel, which occupies the triangular cite on the lake circumscribed by Datura, Narcissus, and Flagler Sts., were Lionel K. Levy of New York—whose best known work is probably the huge New York Coliseum—and Frederick W. Kessler of Palm Beach. Norman C. Schmid & Associates was the consulting engineer.

The Town House contains the first Stouffer restaurant in Florida, consisting of two dining rooms and a cocktail lounge totaling 330 seats. Air conditioning for this area and the other public rooms is by means of a 135-ton system.

The guest room air conditioning is entirely independent, featuring automatically controlled indoor weather — both heating and cooling, according to officials of the Remington Air Conditioning Div., Auburn, N. Y., whose new "Incremental System" was selected.

Similar installations using this system, but on a smaller scale, have recently been completed in the Village House Motor Hotel, Falls Church, Va., and the new office building occupied by the Federal Aviation Administration, Fulton County Airport, Atlanta, the Remington officials said.

Each Guest Room Has Conditioner

Each of the Town House guest rooms is fitted with a built-in all-electric incremental conditioner, the capacity of which is determined in each case by the size and exposure of the room in which it is installed, the announcement said.

"Each incremental conditioner consists of a wall box, built into the wall at time of construction, a slide-in electric heater section with a capacity range of 8,100 to 15,300 Btuh, to which the 208-volt connections were made, a cooling chassis of 9,000, 11,700, or 14,100 Btuh, consisting of compressor, condenser assembly, evaporator coil and air filter, and a decorative room cabinet with concealed control panel," it was pointed out. "The heater section contains the direct-connected centrifugal blowers which circulate the room air for both heating and cooling.

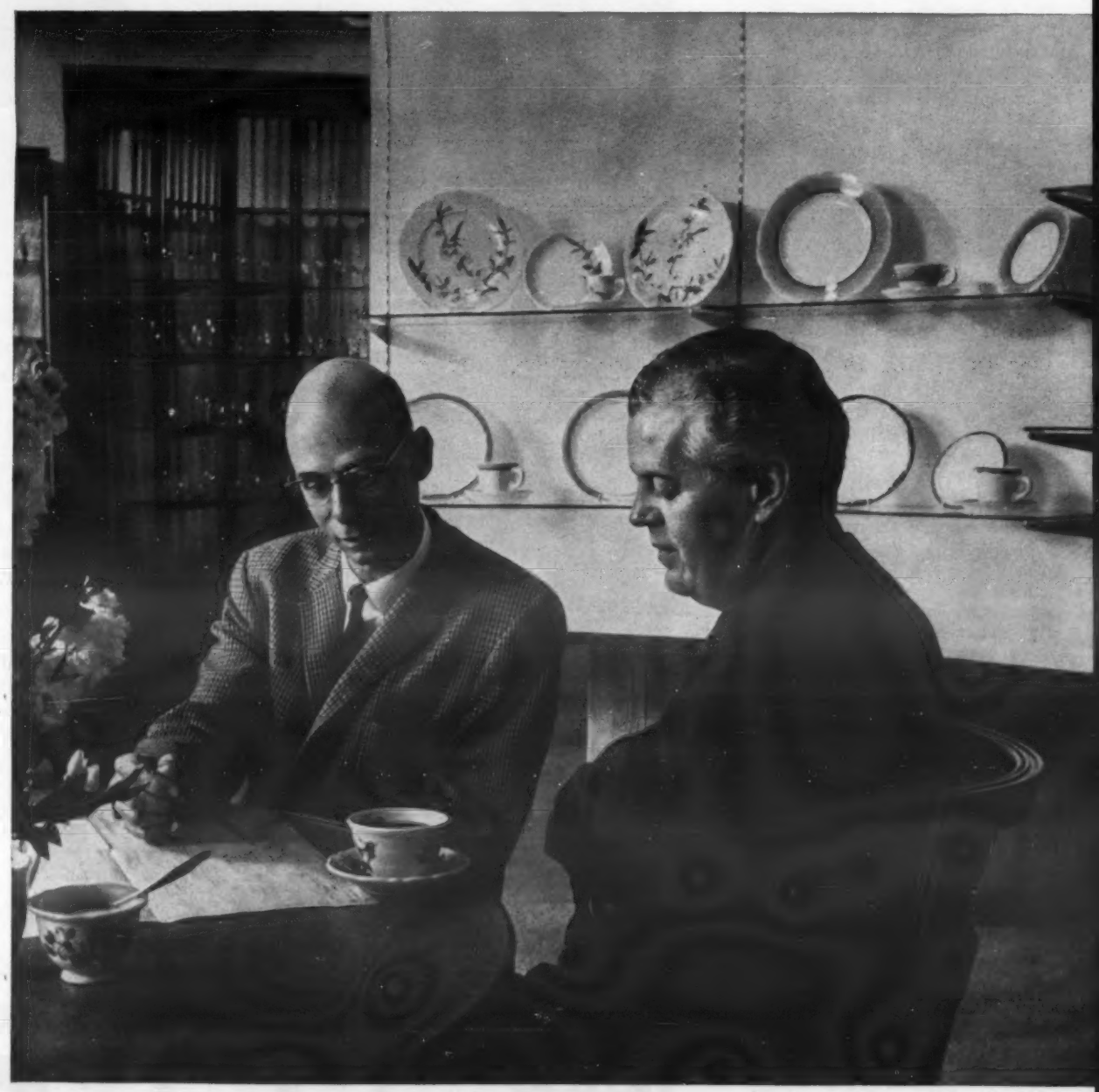
"The design of the controls recognizes that utmost simplicity is essential to the satisfaction of transient guests. A simple 'on-off' switch and thermostat knob are the only accessible controls.

"Once the equipment is turned on, the heating-cooling thermostat takes full control. Should the room temperature drop 1½° below its setting, electric resistance heating elements are energized. If the room temperature rises 1½° above the thermostat setting, the cooling mechanism begins to function. As is apparent, the thermostat is designed with a 3° adjustable neutral zone, within which neither heating nor cooling are provided.

"Room air is constantly circulated while the equipment is on. When cooling is called for the blowers operate at 1,050 rpm. On heating their speed automatically drops to 750 rpm. A unique 'memory' relay continues to operate the blowers

Mr. Val Smith, mechanical contractor for E. A. Hinrichs Co., Lincolnwood, Illinois, says:

"On this three-zone air Honeywell went out



Mr. Val A. Smith in the showroom explaining Honeywell Control System to Max J. Palmer, President of E. A. Hinrichs Company, distributors of fine china and silver.

at the speed corresponding to the function last called for by the thermostat.

"Thus, throughout the heating season, whenever the equipment is turned on, the blowers operate at reduced speed. Conversely, during the cooling season, full blower speed is automatically maintained.

"Another unique feature of this equipment is the automatically controlled positive pressure ventilation. Outside air under pressure is delivered to the room side blowers by a second higher pressure blower in the cooling chassis. Thus, ventilation by pre-filtered, preconditioned air is assured, irrespective of wind direction or stack effect.

"The electrically operated damper is open whenever the equipment is operating, unless a concealed over-riding switch has been put on 'closed' by direction of the motel management. In any case, the damper closes automatically whenever the conditioner is turned off, or in the case of power failure. Once closed, a toggle mechanism assures that the damper stays closed, even in the face of gales or hurricane force."

Jack S. Dorson, president of the owning syndicate, indicated that the Town House chose electric resistance heating because it is simpler, because the cooling equipment will last longer, and because a low noise level was desired.

"Our peak season is in winter, when a little heat is more likely to be needed, especially during the night, than is cooling," he said. "Our engineer felt, and we agreed, that resistance heating, permitting a fan speed of only 750 rpm, would be quieter."

Dorson added: "As for baseboard resistance heating, we considered this, too. But we felt gentle air circulation with ventilation would keep the rooms fresh and also discourage opening the windows. Further, this method enables us to filter the air, the advantages of which are obvious."

Butterfield To Manage Acme Northern Region

JACKSON, Mich. — Appointment of Peter Butterfield as northern regional manager of Acme Industries, Inc., was announced by D. G. Merrill, field sales manager of the company.

His area includes Michigan, Ohio, West Virginia, western Pennsylvania, western New York, and Ontario, Can. Butterfield has been with Acme's New York regional office as a sales engineer since 1956.

Roof Installation Saves Space

AN UNUSUAL air conditioning installation recently completed for a Dairy Queen ice cream shop in Paducah, Kentucky, illustrates a space-saving idea applicable to many small buildings, according to Kramer Trenton Co. A Kramer outdoor air conditioning compressor was installed near the edge of the roof. Due to limited space inside the building, the air handling evaporator had to be installed outdoors. The Kramer evaporator designed for outdoor installations was mounted just below the compressor and discharges cooled air to the interior through a register set in wall.

McQuay Net Sales Set Record

MINNEAPOLIS—Net sales of McQuay, Inc., reached another all-time high for the first nine months of the year but sales for the third quarter and income for both the nine-month and the last three-month period were less than a year ago, according to a report submitted to stockholders by B. E. James, president.

Net sales for the nine-month period ending Sept. 30, 1960, were $13,606,100 compared with $11,889,930 in the same period of 1959. Sales for the last three months amounted to $3,172,770, as compared with $3,460,756 for the third quarter of 1959.

Net income was $398,689 for the first nine months of 1960. In the first nine months of 1959, net income was $437,003. This amounted to $1 a share for the nine-month period on 396,965 shares outstanding as of Sept. 30, 1960, compared with $1.18 a year ago when there were only 364,724 shares outstanding. Third-quarter earnings were 11 cents a share compared with 29 cents in 1959.

"While orders booked and completed sales during the third quarter of the year fell somewhat behind the pace set in the preceding year, they were still the second best for this period in the company's history," James said.

"As a result of this drop from last year, our earnings per common share were also down. Our actual pre-tax profit for the first nine months of this year was actually only 4½% lower than for the first nine months of 1959 but was distributed over a greater number of shares as indicated," he said.

"Although business is at a slower pace than in 1959, our backlog looks healthy and there should be moderate improvements in the final quarter of the year and we expect this to be a good year for McQuay."

Virgil E. Carrier Promoted by Trane

LA CROSSE, Wis.—Virgil E. Carrier has been promoted to manager of its sales office in Denver, The Trane Co. announced.

Carrier was a sales engineer in the Trane Tulsa, Okla. office for nearly four years.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

conditioning system
of its way to be helpful"

E. A. HINRICHS BUILDING
Designer and Builder: J. Emil Anderson & Son, Inc.
Mechanical Contractor: V. A. Smith Company

Large job or small, Honeywell is ready and able to handle any control problem.

"During our 51 years experience in the business," says Mr. Smith, "we've found that many times the small air conditioning job presents some of the toughest problems. But the size of the job has never prevented our friends at Honeywell from being 'johnny-on-the-spot' when we needed them.

"On the E. A. Hinrichs job, we were concerned over the fact that the showroom has 50 large spotlights. These spots produce plenty of heat. But the man from Honeywell checked out the situation and made his recommendations; the three-zone electric system has functioned perfectly from the day it went into operation.

"Mr. Palmer, the president of E. A. Hinrichs, is so pleased with the job, that he's ordering some additional work right now. It'll be Honeywell controlled, too. And that's on his recommendation as well as ours."

You get more to work with when you work with Honeywell. Easily installed controls, accurate specifications, prompt delivery and excellent supervision are the advantages enjoyed by every contractor with Honeywell on his team. And, only Honeywell makes all three types of control systems—pneumatic, electric and electronic.

There are 112 conveniently located Honeywell offices across the nation. Call your local one for details. Or, write Honeywell, Dept. AN 12-175, Minneapolis 8, Minnesota.

Mr. Palmer and Mr. Smith inspect one of three Honeywell thermostats that control the temperature system in the E. A. Hinrichs Company.

Honeywell
First in Control
SINCE 1885

Heat Pumps—Corrosion—Burnouts—Air In System Discussed by RSES Speakers

PORTLAND, Ore. — "The serviceman has the responsibility of understanding the machine he installs and services, including electrical controls, refrigerant circuit, and operating characteristics," stated Raymond G. McCready, manager of special projects development, Carrier Air Conditioning Co., in a talk before the annual convention of the Refrigeration Service Engineers Society.

Get your copy

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Heat Pumps

After reviewing the development of heat pumps, McCready listed several points for installing them which must be given special consideration: the air distribution system to prevent drafts; service accessibility; ice and condensate removal from the outdoor section; the location of the outdoor section so it will not become blocked with snow.

"For his part," McCready offered, "the manufacturer must assume certain responsibilities: "proper design, which includes cost, efficiency of operation, proper testing, serviceability, safety, and protective measures;

"provision of installation and service operating instructions; training of personnel;

"maintaining a stock of parts that will keep units in operation throughout their expected life."

Air In System

"Air in a system causes more trouble than merely increasing head pressure," warned Dr. Walter O. Walker, dean, division of research and industry at University of Miami, and "Genetron" consultant for General Chemicals Div., Allied Chemical Corp.

"The oxygen in air enters into chemical reaction with the oil in the system to form a number of compounds including moisture and acid. It will also bring about the corrosion of iron and aluminum in the system," Walker added. The higher temperature created by the presence of air in the head of the compressor promotes the reaction between the refrigerant and the oil, and will promote copper plating.

"No matter how the air got into the system, get it out of there," Walker concluded.

Corrosion

After a review of the several types of corrosion, Ralph E. Porter, technical services and sales representative, Standard Refrigeration Co., Chicago, listed several practical results of applying theoretical knowledge of the mechanics of corrosion:

"There are a number of places throughout a water-cooled system where galvanic corrosion may occur. It is suspected that the heat being removed accelerates the corrosive action. One company has adopted the practice of copper coating all the tube sheets after brazing, in the manufacture of shell and tube condensers.

"Field failures from electrolysis or galvanic action is a very low percentage, since copper is the only metal exposed to the solution in its passing through the condensers."

Brazing and soldering introduce a dissimilar metal and can result in galvanic corrosion in some cases. Porter stated that epoxy resin has been used very successfully in forming a seal over the complete joint.

Manufacturers of refrigerators use a plastic coating whereever copper is joined to aluminum evaporators or tubing. Many companies submerge their evaporators in a wax solution to further prevent galvanic corrosion.

Porter said that all air source heat pumps installed in any government project within five miles of the ocean must have all copper condensers. Cases have been found where copper condensers with aluminum fins had been used and the fins become so loose that a large percentage of heat transfer was lost. The same thing can happen to evaporators in certain locations, he offered.

Burnouts

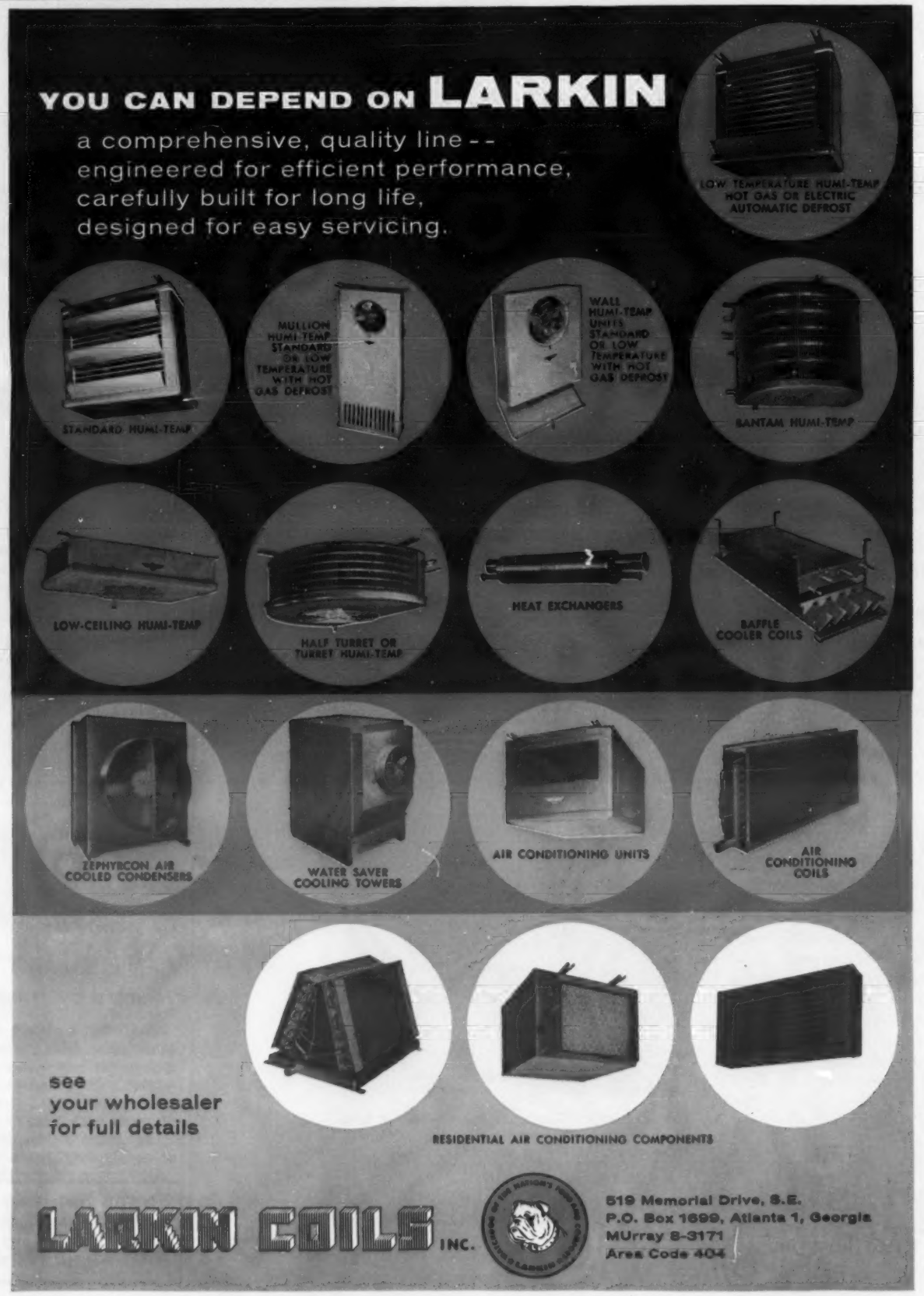
"Far and away the most important component change procedure in connection with household refrigerators is the motor compressor," stated A. E. Manning, vice president, Kelmore, Inc., Newark, N. J., in discussing changeout procedures for domestic refrigerator components.

He classified motor compressor failure into two broad classes, "Those which will run and those which will not run." He further divided those which will run into, "Those which are so noisy as to be objectionable and those which will not pump."

"Compressors which will not run present the most serious problem," said Manning, "because so frequently this is caused by a burned out motor. In replacing a compressor which will not run, he suggested that, "It is best to proceed under the assumption that the motor is burned out until it is proven that this is not the case."

When replacing a compressor which has been burned out keep in mind the absolute necessity of thoroughly cleaning out the system, using Refrigerant-11 as a flushing agent. If at all possible, the refrigerator should be removed to the shop and the cleaning be carried on there.

No matter which component is changed—motor compressor, condenser, evaporator, strainer, capillary, restrictor, solenoid—"the change of any one of these components requires opening the system," Manning warned, and it is then necessary "thoroughly to evacuate the system, conduct thorough leak testing, and assure accurate recharging."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a comprehensive, quality line--
engineered for efficient performance,
carefully built for long life,
designed for easy servicing.
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STANDARD HUMI-TEMP
MULLION HUMI-TEMP STANDARD OR LOW TEMPERATURE WITH HOT GAS DEFROST
WALL HUMI-TEMP UNITS STANDARD OR LOW TEMPERATURE WITH HOT GAS DEFROST
BANTAM HUMI-TEMP
LOW-CEILING HUMI-TEMP
HALF TURRET OR TURRET HUMI-TEMP
HEAT EXCHANGERS
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AGA Air Conditioning, Heating Committee Reorganizes; Approves Promotion Plans

DETROIT—Air Conditioning and Heating Committee of the American Gas Association reorganized itself into three subcommittees and at its fall meeting approved a number of plans for increased promotion of gas air conditioning and heating during the coming year.

This was reported recently by Ralbern H. Murray, committee secretary.

The three sub-committees will specialize in large tonnage air conditioning (25 tons and up), small tonnage commercial air conditioning (3 to 25 tons), and commercial space heating.

A steering committee, comprised of a utility and manufacturer representative from each of these sub-committees, will coordinate the policies and actions of all three.

A. B. Banowsky of United Gas Corp., Houston, Texas, chairman of the full committee, will chair the steering committee and the commercial heating committee.

John F. Moore of the Lone Star Gas Co., Dallas, will head the large tonnage air conditioning committee and Robert P. Johnson of the Cambridge Gas Co., Cambridge, Mass., will head the small tonnage air conditioning committee.

Approved at the September meeting were:

A gas air conditioning sales school which was held Dec. 5-9 in Columbus, Ohio.

A new year-round AGA industrial and commercial promotion program to be issued for the first time in April, 1961. Program would include promotion plans and materials on air conditioning and school heating. To coordinate with this program, the committee will postpone the issuance of sales promotion portfolios in these areas until that time.

Participation in the Producers' Council, Inc., air conditioning seminar.

A new booklet "Gas Goes To School" to promote year-round air conditioning for schools. Committee decided to prepare a planned program on the installation of gas equipment in schools to be presented by gas companies to stated authorities.

Moore reported to the committee his success in changing the correspondence course of the National Association of Power Engineers to include gas air conditioning.

He also informed the committee he was working with Prof. Paul J. Grogan of the University of Wisconsin to organize a special air conditioning correspondence course. Further he is attempting to get gas air conditioning into courses sponsored by other colleges.

The committee also set up a task force to recommend ways that AGA can promote its participation in the 15th International Heating and Air Conditioning Exposition to be held in the International Amphiteatre in Chicago, Feb. 13-16.

Westinghouse To 'Electrify' New West Los Angeles Apartment Bldg.

PITTSBURGH — Westinghouse Electric Corp. has been awarded a contract to "electrify" a 13-floor apartment house in California, it was announced here.

Chris J. Witting, Westinghouse vice president, consumer products, said the building—Park Westwood Tower—is now under construction in West Los Angeles. He added that the apartments will be equipped with electric heating, air conditioning, kitchen and laundry appliances, and special lighting. The 144 deluxe apartments, 96 one-bedroom units, and 48 two-bedroom units will be heated and cooled by heat pumps.

Through the cooperation of various divisions of Westinghouse, the all-electric concept was presented to Cecil R. Moss of Moss Construction Co., general contractor for the project. "The idea of buying a 'package' of all the electric equipment we needed from one manufacturer appealed strongly to us," said Moss.

The groups working together were the air conditioning, major appliance, elevator, and Micarta divisions, Witting explained. The value of the Westinghouse contract was approximately $300,000.

The toward apartment building is located at 969 Hilgard Ave., Westwood Village, overlooking the campus of the University of California.

Park Westwood Tower, Inc. is the builder and the architect is Victor Gruen Associates.

15-Ton Unit Used On Most Powerful River Towboat

ST. LOUIS—A 15-ton Curtis packaged liquid chiller air conditioning system was selected for use on the *America,* said to be the world's most powerful river towboat, recently christened here.

The new, 9,000-hp, quadruple screw boat is slightly larger than its sister ship of the Federal Barge Line, the *United States,* christened in December, 1958. Both ships were designed and produced by the St. Louis Shipbuilding & Steel Co.

The sister ships contain similar equipment for air conditioning manufactured by Curtis of St. Louis.

Each cooled area including pilot house, two large guest rooms, six officer staterooms, crew quarters, and galley can be individually controlled. Liquid chillers, by Curtis, were chosen for their characteristic compactness and accessibility, that company stated.

The new *America,* rated at 500 hp more than the *United States,* is capable of pushing 42 barges loaded with 40,000 tons of cargo with its four Diesel engines and 108-in. diameter screws. A fully-loaded tow is equivalent to 14 freight trains of 100 cars each and would be approximately one third of a mile in length, 400 ft longer than the *Queen Elizabeth,* it was pointed out.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

editorials on the subject).

The trimester plan, which affords seven weeks of vacation (in three pieces) rather than 17 solid summer weeks of idleness, means that students will be unable to work at fulltime summer jobs.

However, a trimester college lad swaps two summers' labor *at low pay* for a full year's earnings at professional rates which match his education.

Increasing availability of scholarships and loans make summer work far less important than it used to be, moreover.

The trimester plan also recognizes that college teachers are in short supply and that, furthermore, they will be willing to give up their long summer layoffs in return for higher incomes.

The pay of MSU teachers, for example, will jump 45 per cent under the trimester plan. Professors aren't sneezing at this windfall!

Following the University of Pittsburgh, MSU is the second major college in the U.S.A. to adopt the trimester system. (It has been quite successful in other countries.)

Incidentally, the University of Michigan is installing it, also, in its Dearborn branch.

Considering the advantages this new Collegiate Calendar offers to taxpayers, students, teachers, (and to the air conditioning industry) a challenging question is in order:

When will other state-supported colleges and universities get the message? And when will courageously civic-minded PTA's espouse this answer to over-crowded high schools?

Trimester Plan is something about which almost everyone (outside hallowed ivy-clad walls) exclaims: "So simple and sensible! Why didn't we do this a long time ago?"

Enrollments are booming at such a rate that classrooms and dormitories simply aren't available to a great many willing children of deserving parents—unless these kids are all-A, or B-plus students.

This situation patently is unfair, and will become intolerable within the next few years—unless the Trimester Plan, or an equivalent—becomes widespread.

Yet, all over the nation, we adhere to a leisurely educational pace, with the bulk of faculty and students turned loose each summer, for no good reason.

Parents: unite and promote! Otherwise, your Stevie and Sally may not have a chance to receive the higher education you want them to have, and which our Nation needs for survival in a hotly competitive world.

Cool, Devil, Cool

Remington Corp.
Editor:

Paul Domke's story from "Presbyterian Life" which appeared in your Oct. 31 issue gave me a big laugh. However, knowing your desire for accurate reporting, I do believe that there has been some mistake.

Fact of the matter is that our predecessor company air conditioned Satan's Headquarters over 40 years ago. If you don't believe it take a look at the enclosed trademark which was used in color on its letterheads until 1934.

Herbert L. Laube, President

Incidental Intelligence

Touring "the provinces" currently are:

(a) A singer (?) named Rusty Pipes; and

(b) A dancer billed as Mercedes Bends.

Who was it who said "corn" doesn't sell? And where was he when the fit hit the Shan?

Too Close for Comfort

No longer is it a cliche to observe that the world is shrinking. In recent years—even months—something has happened to ties, cars, turkeys, radios, telephones, men, cereal boxes. They're all getting smaller, narrower, and thinner.

Take compact cars. They twist and fit into parking spaces 1957 autos couldn't even enter endwise. Or put one of your birthday ties next to the neckwear you wore a year or two ago. It's half the width.

And look at hat brims. They used to be about three inches wide, even more. Now they're so narrow that they're near the vanishing point.

Speaking about clothes, your old suits would look peculiar if you wore them today. The modern lapel is half the width of a few years ago. But the process of miniaturization doesn't stop there.

As Alice in Wonderland worried: "My, my! Everything's getting littler and littler!"

Idolized TV-movie heroes have shrunken, too. Clark Gable may have died at the right moment. Today's idols are "short-but-dangerous" Marlon Brando, Bobby Darin, Yves Montand.

And Mickey Rooney has returned from unwanted retirement to renewed acclaim.

Fat round cigars have shrunken into "cigarillos." Radios are so small you don't merely carry them in your pocket—you can fit them into your wallet!

Have you seen the tiny new telephones? In "Dope's" boyhood a telephone was two feet wide, a yard long, and hung on a wall.

Not to mention—and we do so with a distinct note of sadness—the shrinking dollar. For

THE ULTIMATE IN QUALITY AND PERFORMANCE

SPECIFY PROLONGED LIFE!

Governair's COPPER FITTED EVAPORATIVE CONDENSER

FEATURES:

ALL COPPER AND BRASS water pan, float valve, condenser coil, spray tree, eliminators, blower scrolls. Standard galvanized blower wheels and stainless steel shaft.

WRITE FOR COMPLETE INFORMATION

Find It Fast In The Yellow Pages GOVERNAIR

You have a definite feeling of confidence when you specify Governair's COOPER-FITTED evaporative condenser with its many fine features.

ALL spray water is contained within a COPPER WATER JACKET. This exclusive DOUBLE WALL CONSTRUCTION assures product longevity and lower maintenance. In fact, throughout the entire unit, you find QUALITY . . . with no worry about faulty galvanizing or temporary corrosion protection.

You also have an extremely WIDE SELECTION, as this evaporative condenser is supplied for REMOTE installation or as an integral part of Governair Corporation's self-contained PACKAGED equipment . . . Conventional; Multi-Zone (as pictured); and Water Chillers.

GOVERNAIR

4840 N. SEWELL • OKLAHOMA CITY

those who long for the good old days—*this* is the saddest note in the whole story.

Stories of the Week

Jokers in our U.S.A. Bureau of Standards have issued, to friends, a "scientific" card on the intriguing subject, WOMEN. Herewith:

"Symbol: WO. Atomic Weight: 120. Occurrences: Found wherever a man is found, seldom in a free state.

"Physical properties: Generally rounded in form. Boils frequently; but may freeze at any minute. Melts when treated properly. Very bitter if not used well.

"Chemical properties: Disturbingly active. Possesses great affinity for gold, silver, platinum, and precious stones. Violent reactions when left alone. Able to absorb great amounts of food. Turns green when placed beside a better-looking specimen.

"Uses: Highly ornamental. Helpful as a tonic in acceleration of low spirits, etc. Equalizes the distribution of wealth. Is probably the most powerful income-reducing agent known.

"Caution: Highly explosive when in inexperienced hands."

When an admirer told playwright Brendan Behan that an actor had played one of the bawdy scenes in "The Hostage" with admirable restraint, Behan reared up and spat.

"He'll have to go," the author snorted.

Saucerman landed his space ship in the Congo.

"Take me to your leader," he requested automatically.

"Kasavubu or Lumumba?"

"No, no. Your leader. We can dance later."

Beered Serviceman

Over a story about a refrigeration serviceman who was trapped inside a walk-in beer cooler, the *Detroit Free Press* ran this headline:

IN THE COOLER—A NEAR BIER.

Last Gasp

For years Judy Amspacher of Norman, Okla., has been telling everyone that she intended to name her first daughter Scarlett, after the heroine of "Gone With the Wind."

Now she isn't so sure.

She is marrying a man whose last name is Feaver.

Air Conditioning & Refrigeration
FACTORY
PROCESSING EQUIPMENT
• Pressurized Tracer Gas Units • Portable Refrigerant Charging Stations • 5 Unit Rough Vacuum Stations • Precision Laboratory Chargers • Leak and Moisture Indicators • High Vacuum Pumps and Accessories
. . . complete production line facilities engineered to your requirements.
AIRSERCO MFG. COMPANY
435 Melwood Ave. • Pgh. 13, Pa.

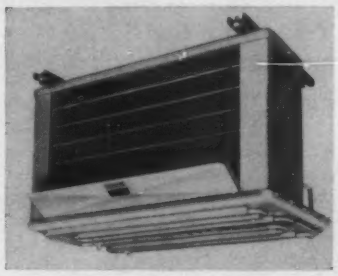
Time Initiates, Temperature Terminates Defrost Cycle on Dunham-Bush Unit

WEST HARTFORD, Conn.—Dunham-Bush, Inc., announces a new line of HC Heat Cycle defrost units incorporating a completely automatic, time initiated-temperature terminated defrost system.

The HC system is an entirely new principle in low temperature defrosting, according to the company.

"An HCE 'Inner Fin' evaporator is combined with a specially engineered HCX Heat Cycle Exchanger to produce a fast, safe, and efficient defrost system," it was stated.

"Super-heated discharge gas from the compressor passes through one side of the specially designed Heat Cycle Exchanger, enters the inner tube



DUNHAM-BUSH HC evaporator.

defrost circuit of the HCE evaporator, and defrosts the coil from the inside.

"Sub-cooled liquid refrigerant returning from the inner tube circuit of the evaporator passes through the other side of the Heat Cycle Exchanger where it is boiled off before returning to the compressor. This 'boiling off' action insures against liquid returning to the compressor during the defrost cycle and eliminates consequent motor overload.

"When defrosting is complete, a temperature sensitive switch (located on the evaporator) terminates the defrost cycle and then provides the necessary fan delay before returning to the normal refrigeration cycle.

"During the normal cycle the refrigeration circuit is standard except that the suction gas passes through the Heat Cycle Exchanger. With nothing flowing through the other side of this exchanger there is no effect on the suction gas.

"The Dunham-Bush HC System includes Heat Cycle Evaporator, Heat Cycle Exchanger, and a defrost kit. Capacities run from 4,500 to 72,000 Btuh at 10° T.D."

Heat Controller Adds 25% More Area

JACKSON, Mich.—Heat Controller, Inc., here has added plant space equal to 25% more square feet than formerly. Production has commenced in the new area.

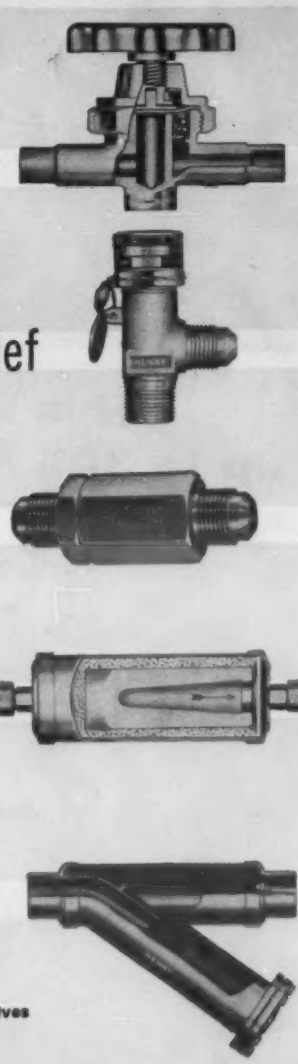
J. A. Knight, president, said the addition was necessary due to the pre-season orders for dehumidifiers, room air conditioners, and central air conditioners received by his company for the 1961 season.

He added that a portion of the new area will be used for warehouse in order to meet the demands of the company's seasonal appliances.

Heat Controller manufactures the above-noted products and also heat pumps under its trademark, "Comfort-Aire," it is pointed out.

HENRY VALVE CO.
CONTROLLING FLOW
SINCE 1914

Every product bearing the name Henry carries with it complete assurance of on-the-job satisfaction. This quality of performance and the confidence it inspires have made Henry the most accepted line in the industry. For Commercial Refrigeration and Air Conditioning Systems Using Refrigerants 12, 22 and Ammonia.



VALVES—Shut-off
Packless, Packed and Wing Cap Types
Integral and Flanged Connections

VALVES—Pressure Relief
Piston and Diaphragm Types for Atmospheric and Vent Line Applications

VALVES—Flow Check
Spring Loaded and Free Floating Types—also for water and air

FILTER-DRIERS & Driers
DRI-COR Sealed and Cartridge Types with Molded Core and Granular Desiccants

STRAINERS—All Types
Sealed and Cleanable—Applicable for water, oil and air

Also: Tube Piercing, Line Tapping, Line Port and Can Tap Valves
Strain-O-Kaps and Terminal Seals for Hermetic Compressors

HENRY VALVE COMPANY
For Refrigeration, Air Conditioning and Industrial Applications
MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

Progress Report

How ARI Is Carrying Out Major Changes In Organization, Objectives Decided Upon at Atlantic City Meeting Last Year

The Air-Conditioning & Refrigeration Institute, principal association of manufacturers of air conditioning and refrigeration equipment, in the past year-and-a-half has been going through a major change in its organizational structure and in its programs of objectives. In his president's report at the recent annual ARI meeting, Rudy Berg, vice president, Copeland Refrigeration Corp. and outgoing president of ARI whose term of office covered the period of the change, reported on the progress made by the association. For the reason that what ARI does will have considerable bearing on the future course of the industry, his report is presented in some detail. (A NEWS story covering the major news made at the meeting was published in the Nov. 28 issue).

By Rudy Berg, Retiring President, Air-Conditioning & Refrigeration Institute

The Atlantic City meeting last November is a good starting point for this report because it was there that the groundwork which had been laid during the preceding months was brought to fruition.

Most important development to report as a result of that November ratification meeting was the adoption of new policies and procedures for the internal strengthening of our organization.

Primary among these new policies and procedures is the budgeting and accounting set-up of ARI's internal structure under which the membership has a closer check on the activities which are to be carried out by the association, as well as the manner in which these activities are implemented by your staff.

This new budgeting and accounting process provides for breaking down all ARI activities into "projects," each with its separate budget figure, and with provision for financing of each project by affected "due centers" or from other ARI funds.

We have been operating under project-type budgeting for almost a year, and believe that we have done well—from a "standing start" as it were. Our members have accepted the fact that the initial estimates of expenditures were at best "intelligent guesses," and that our Washington staff has lived within the budget and, from experience, has offered a new one.

Changes In By-Laws

In addition to the changed accounting procedure and policies, other changes in our by-laws accomplished by you at our meeting in Atlantic City last November were:

1) You gave your board of directors the right to accept as a member of ARI, the divisions of corporations which were not in themselves members, with proviso that wholly-owned subsidiaries were not to be considered as "division" members.

2) You included a "grandfather clause" in the by-laws, providing that existing members of ARI whose products did not fall within the scope of any product-section might still retain their membership in the institute.

3) You changed the annual meeting date from May to the late Fall—and this is the first annual meeting under the new schedule. At the same time, the ARI fiscal year was changed to correspond with the calendar year—and the activities report you will be asked to consider later in this meeting will, as a result, cover activities from Jan. 1 through Dec. 31, 1961.

4) You changed the set-up of the board of directors, providing for representation of product-sections and more "at-large" directors.

5) You authorized requirement that ARI members manufacturing products within the scope of any ARI product-section *must* support the activities of such section, whether they participated in its activities or not—in the hope that all such companies *would* participate in, as well as support, the activities of *all* product-sections to which their products made them eligible.

6) You firmed up the composition of your nominating committee.

What Happened In 1960

Now, let's talk about what has happened during 1960, on the basis of our changed set-up. Much of it is work that was being done anyway, but it is now more formally classified under the project method.

ARI's by-laws set up ARI's activities under four broad categories, which are:

1) **Marketing** — which includes public relations, publicity, promotion, contacts with the public, press, radio, TV, government agencies, allied associations and other groups on matters involving public relations.

2) **Statistics**—more properly termed the collection and dissemination of industry information.

3) The establishment of equipment and product standards and safety codes which includes certification programs.

4) Relations with government agencies, trade associations and other interested groups.

In public relations, the ARI headquarters staff has issued about 30 press releases in 1960 (to date), publicizing the industry generally and some of its phases specifically. This is almost one each week.

In addition, it has worked with 40 or more magazines—both in the industry and of the general consumer type—on special articles covering many as-

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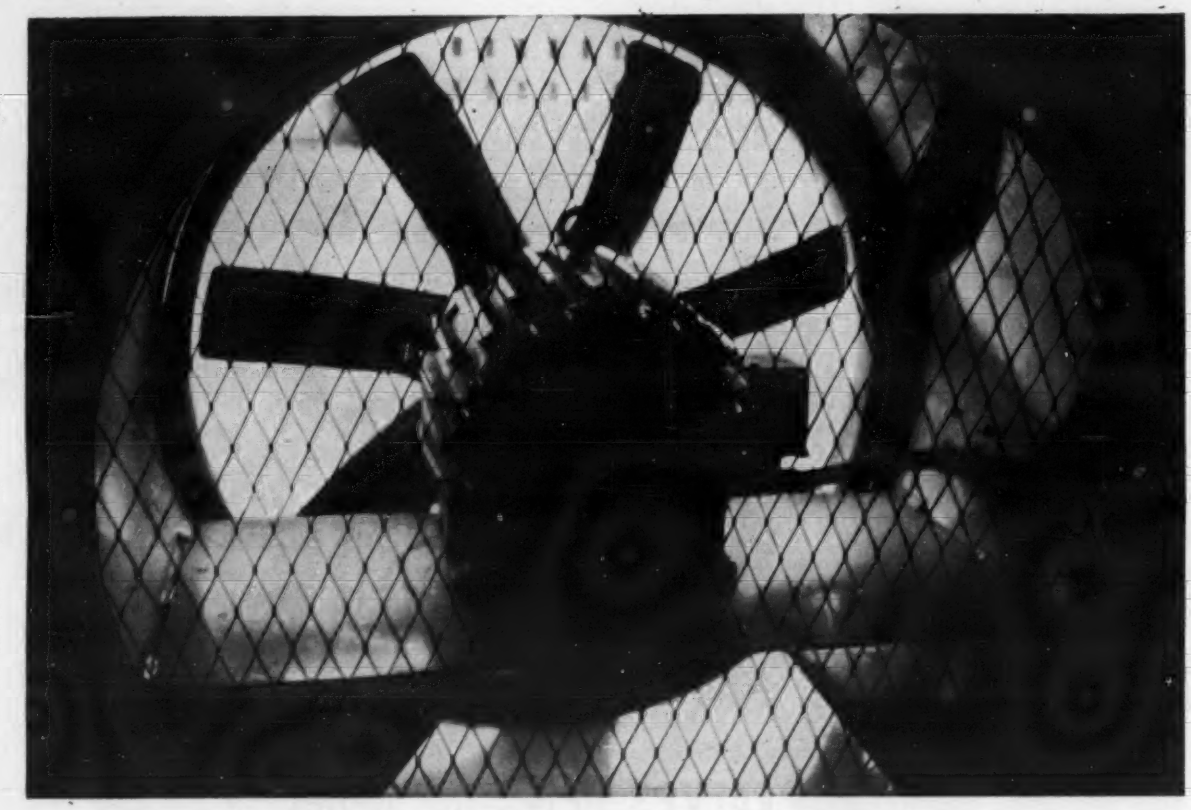
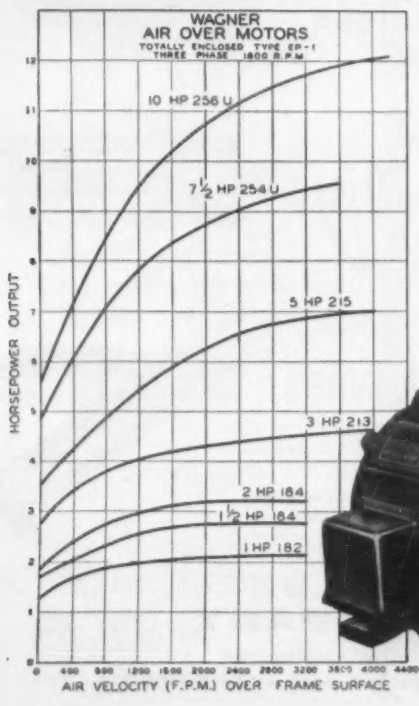


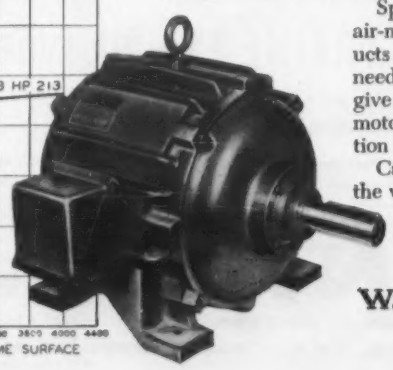
This Wagner Motor can save you up to 30% in costs on air-moving equipment



It's the Wagner Air-Over Motor . . . *specifically* designed for air-moving applications in which a propeller or axial flow fan is mounted on the motor shaft.

Save you up to 30%? Yes, for Wagner Air-Over Motors can deliver more power than their rated horsepower output. For example, as shown on the chart at left, a 5 horsepower rated motor installed in a fan or blower which delivers about 4,000 feet of air per minute is capable of delivering 7 horsepower. You get more work from a smaller motor . . . at costs up to 30% less.

Wagner Air-Over Motors are suitable for either horizontal or vertical mounting. They are totally-enclosed, nonventilated NEMA Design "B" motors (normal torque—normal slip). You can use them in cooling towers, crop dryers, exhaust systems, air-cooled heat exchangers and condensers . . . any air-over fan and blower application.



Specify Wagner Air-Over Motors for all your air-moving equipment applications. Your products will operate at peak efficiency for years, need less service and fewer repairs. And, you'll give your customers equipment powered by motors they know . . . motors that have a reputation for long, dependable service.

Call your Wagner Sales Engineer now . . . get the whole Wagner Air-Over Motor story. There are Wagner Branches in 32 principal cities across the country.

Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 33, Mo.

WH60-13

WRAP AROUND CABINET ENCLOSED ON EACH SIDE BY ALUMINUM EXTRUSIONS

PERFORATED STAMPED GRILLES

Aluminum

offers new design versatility in

AIR CONDITIONERS

through New Forms, Finishes and Fabricating Techniques ⟶

WRAP AROUND CABINET OF COLORWELD COIL. EXTERIOR GRILLE OF EXPANDED ALUMINUM.

HINGED GRILLE OF ALUMINUM SLATS

EXPANDED METAL GRILLE

How Aluminum offers air conditioner manufacturers FLEXIBILITY and ECONOMY IN STYLING, FABRICATING AND FINISHING

The sketches on the front side by Reynolds Styling and Design Department suggest a few of the many new ways that strong, lightweight, rustfree aluminum can contribute to air conditioner design. Because aluminum is the most versatile of all metals, it permits a wide range of styling freedom and fabricating and finishing techniques. Here are a few examples:

In fabrication, aluminum can be drawn, extruded, cast, stamped, roll formed, expanded, perforated or pierced. (The "idea" sketches show examples of expanded, extruded, stamped and perforated applications in air conditioner cabinets and grilles.) A wide choice of *attachment* methods is also available: welding, mechanical fasteners, tabs and cast pegs, bolts and rivets, metal stitching and epoxy resin adhesives are among the most common. In finishing, a wide variety of sales appealing *colors* can be easily obtained through painting or color anodizing. A variety of surface *textures* is also available.

This versatility also points the way to *manufacturing economies.* For instance, modern techniques in design, tooling and assembly permit higher rates of production with aluminum at low cost. Aluminum extrusions, with their nominal die costs, are a good example. Aluminum's light weight cuts costs of certain reinforcing or supporting parts. Lightweight aluminum also lowers handling and shipping costs. And lightweight, easier-to-handle aluminum air conditioner cabinets add important *consumer sales advantages*—especially in portable units.

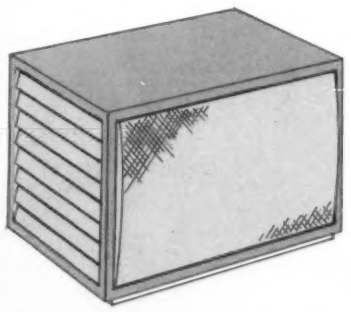
Economies in finishing are also worth investigation. One-Side-Bright Aluminum can be used to eliminate costly buffing operations. Pre-painted aluminum sheet (Reynolds Colorweld Aluminum Coil) is ideal for applications calling for a painted stock. (Note air conditioner cabinet application in "idea" sketches.) Colorweld Aluminum Coil will take most forming and fabricating operations without damage to paint surface.

Embossed or brush finished aluminum sheet, in standard or special designs, requires no additional finishing operations—permits low cost styling "change-overs". Laminates of aluminum with vinyl plastics or wood cut costs and weight in sandwich panel and other decorative or functional part construction.

Permanence of aluminum is important to you and your customers. Aluminum cannot rust, ever. This means that neither in-the-wall condensation nor year after year exterior exposure to the elements can cause aluminum cabinets to deteriorate. Unsightly rust stains on walls are eliminated.

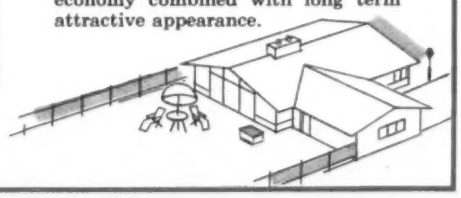
New ideas for using aluminum in air conditioners and other appliances are being developed constantly. Reynolds Styling and Design and Product Development groups are ready to assist your own stylists and engineers in putting the newest and best aluminum forms, finishes and fabricating techniques to work in your products. Reynolds fabricating facilities are also at your service to assist in actual fabrication of finished aluminum parts. For highest quality aluminum mill products or for details on these services, contact your nearest Reynolds branch office or write *Reynolds Metals Company, Box 2346-AV, Richmond 18, Virginia.*

NOTE: Before you make or buy any appliance part, have it designed and priced in aluminum. Remember—basic material costs do not determine part costs. New techniques and processes—applicable only to aluminum—can often give you a better product at a lower *final* cost.



OUTSIDE CONDENSING UNITS

Reynolds Aluminum, plain sheet or Colorweld®, is ideally suited for fabrication of wrappers for outside condensing units. Aluminum offers economy combined with long term attractive appearance.



REYNOLDS ALUMINUM

ARI Progress Report--

(Continued from Page 12)

pects of refrigeration and air conditioning, and their applications.

It has participated in the development of two promotional films and has worked with radio and TV outlets which have requested information.

It has, under the direction of the Unitary Air-Conditioner Section's promotional committee, handled many facets of the promotion for the unitary certification program, and has supervised activities of the advertising and public relations agency engaged by the section for the certification program.

It has provided information for the advertising agencies of a number of ARI member-companies, needed in the development of advertising and public relations campaigns, and has likewise provided non-technical information to government agencies. It has answered literally thousands of requests for information from the public, encyclopedias, educational institutions, and others.

It also worked with the ice cream cabinet section in publication of a booklet on service and maintenance of cabinets, titled "Cabinet Conversation." We recommend that all sections read this booklet as it does give evidence of product section members working together to their individual and collective benefit and to the benefit of the refrigeration phase of our industry.

Plans for '62 Show

Although 1960 has been a non-show year, the public relations department has been laying plans and cooperating with the show committee on promotional requirements for the 1962 ARI show to be held in Los Angeles. Further in this connection, you have an excellent show committee and when the record of the 1962 show is written you will all have cause to be profoundly grateful to the untiring efforts and dedication of Hy Jarvis and his committee.

150 Statistical Summaries Prepared

In the field of statistics, the ARI statistical department will have gathered information for and issued, by the end of 1960, some 150 statistical summaries covering the products of most of ARI's product-sections. It has worked with governmental and other fact-gathering organizations, and has made special studies at the request of member groups.

The statistical department has also worked with the association council in the conception and formulation of a "package" of saturation and market data from the 1960 census of housing. As some of you may know, the 1960 census of housing had, for the first time, a question on air conditioning. Work on getting this question included was begun with the Census Bureau officials more than three years ago, and its inclusion was the result of no little effort.

Briefly, the "package" of tabulations and cross tabulations worked out by the association council in cooperation with census bureau will cover all products data collected in the census, and will be made available to industry at $3,000 per package. Of course, this will include the data on air conditioning, which will be mailed to all members late in December by the data-processing center which is doing the job for the council.

On the subject of statistics I would earnestly urge greater participation in and use of statistical data. Remember—even though you may not right now have an interest in statistical data—that your interests in this industry are even now being protected and developed by the statistical data presently contributed. So do your share and participate.

Cooperation and sharing of information, instead of withholding, is a concept that is entitled to succeed because it is right in principle. Inadequate statistics lead to poor market planning and to chronic over-production or under-production. If you will look at most any other trade association you will find that statistics are of paramount importance in their activities.

In the engineering department, five new standards were published during this year, replacing 18 old standards under a policy of consolidation. A number of others are in process of revision in connection with proposed certification programs.

A most important activity of the engineering department has been its work with the Electrical Testing Laboratory, and with participating companies, in connection with the unitary air conditioner certification program.

This program, now almost two years old, is moving satisfactorily. Almost 40 units have been tested under the program and most of them have passed the exhaustive tests required for certification—some of them with minor modifications—the program has been widely publicized, particularly in the industry.

As an example of the effect of the promotional activities, a survey of dealers across the country during the past summer revealed that at least 80% of them are aware of the program's existence, and about half of them are using it in their selling efforts.

In addition to this very successful program, a number of other sections now have certification programs under con-

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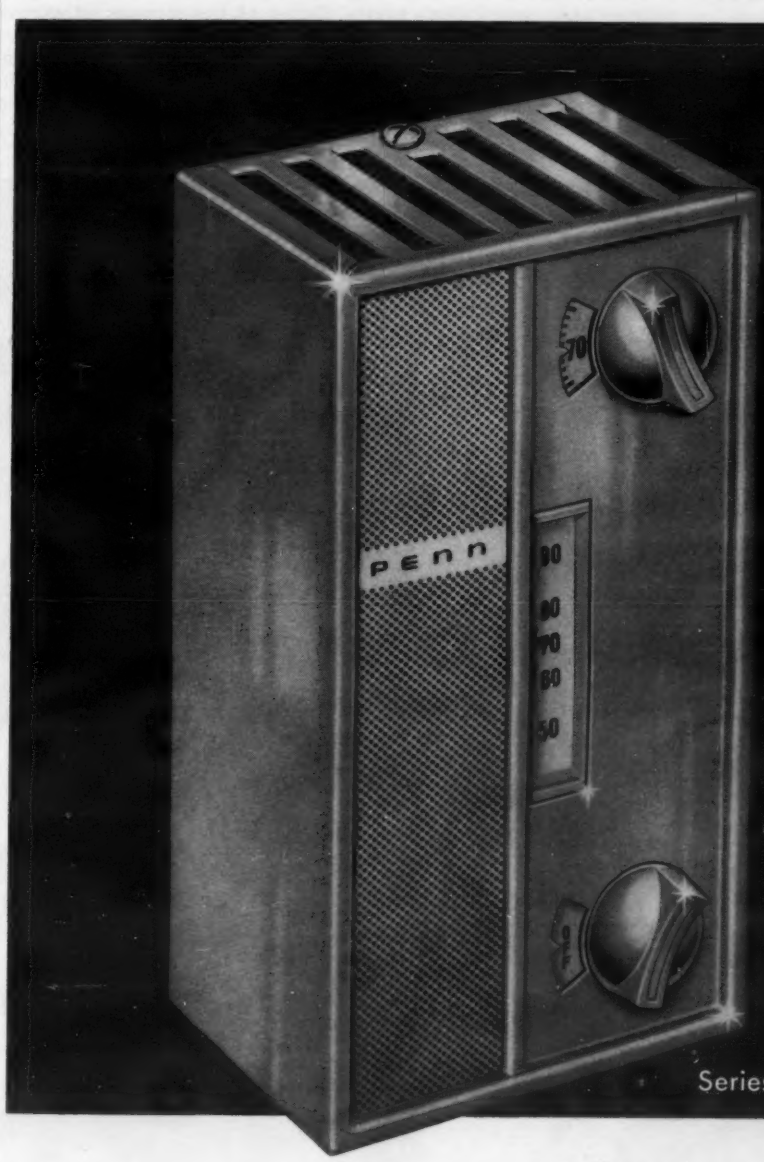


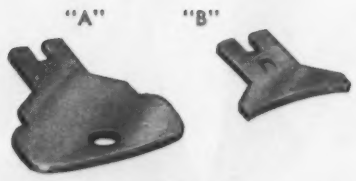
NEW

line voltage

THERMOSTAT

with front panel control of all heating-cooling functions!

Series 822



How settings are locked

Where it is desirable to lock settings, installer removes cover and pushes out factory-installed key "B" from each adjusting knob. This disconnects knob from adjusting shaft. Then, user may insert special key "A" (supplied for key chain use) through knob slot and turn to make desired settings . . . remove key and thermostat is locked as adjusted.

Take your choice...heating, cooling or heating-cooling...each features unique, easy-to-use, locking-type knobs

Here's the line voltage thermostat that has "everything" desired for accurately controlling temperature in motels, schools, offices and similar installations.

It has easy-to-read temperature and function selector dials. It has an accurate bimetallic thermometer with vertical dial. It has exclusive, locking type adjusting knobs, attached to cover but connected to adjusting shafts by factory-installed "keys" within the knobs. It has a unique, built-in but concealed adjustable high limit stop for temperature dial. It has an unusually sensitive element and mechanism which provide low operating differential at all voltages and all amperages within its rating. It has easiest "field wiring" ever... simply connect to large terminals *on back of thermostat.* And, it has modern "thin-line", compact styling. Learn more about this new thermostat... write to the Penn factory for Bulletin 3233.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

ARI Progress Report--

(Continued from preceding page)

sideration. I'll go over them briefly:

Unitary heat pumps, not now included in the unitary certification program, probably will be a part of it in 1961.

One of the heat transfer subsections is planning certification programs for room fan-coil air conditioners and for room air induction units.

The water cooler section is committed to a program for drinking water coolers.

Revisions of standards in consideration of certification programs are under way in the centrifugal liquid-chilling packages section, sub-section B, of the heat transfer section, mobile refrigeration section, reciprocating liquid-chilling packages section and valves, driers, fittings and accessories section.

At the same time, the reciprocating compressor and condensing units section is examining the problems involved in, and the possibilities of, a certification program covering at least some portion of its products—particularly end products rather than components!

Relations With Others Improving

Our relations with government agencies, with other trade associations, and similar groups has continued at a high level and shown improvement in many quarters during the past year and a half. Our government relations committee, which regularly meets on a monthly schedule, has had as its guests representatives of various federal agencies interested in our industry and its products.

There has been set up, as a result of our government relations activity, a government-industry work group, which holds monthly meetings for consideration of simplification and reduction in the number of federal standards and specifications as they affect our industry.

Traffic and Credit

Your traffic and credit committees, whose staff work is handled in the same department, have been active during the year. There are two credit committees — whose activities will be consolidated into one budget during the coming year. Eighty-three member-companies participate in activities of the general ARI credit committee, and about 50 in the air conditioning manufacturers credit group.

Under direction of the general committee, which met seven times in 1960, detailed credit reports were prepared for each meeting, in addition to two detailed semiannual paying guides, covering 650 customers of ARI members, which contained information as to the high credits granted, and the paying habits of customers.

The air conditioning manufacturers credit group met three times in 1960. Four detailed credit reports were compiled during the year, and discussions were held on credit problems applying to dealer and distributor accounts, financing plans, floor plans, field warehousing, payment and performance bonds, retainage, leasing, etc.

The general traffic committee is made up, at present, of 14 traffic managers of member companies, although representation on the committee is open to any interested member.

The committee, which, in the past, has been successful in securing a favorable low rating on carload shipments of equipment, met twice in 1960. One of its activities during the year resulted in removal of an "expiration date" on the low rates which had been established earlier.

The committee instituted a survey early in 1960 to determine by what form of transportation compressors moved. It revealed that trucks carry the major part of this tonnage, and a special committee on compressor ratings is now working on a proposal to the railroads, with a view to obtaining a lower rating on compressors, at a higher minimum weight, to encourage shippers to move more of this substantial tonnage by rail.

Government Regulations

As a result of a number of proposed—and in some cases already-enacted—state and municipal regulations aimed at sound-control, our government regulations committee has recommended that ARI should take the initiative in developing necessary standards for testing, rating and specifying equipment sound pressure. This is now under review. The committee on municipal codes and regulations has been continually active in meeting with various cities and towns across the country and has been succesful to a large degree in influencing practical and realistic legislation affecting our industry.

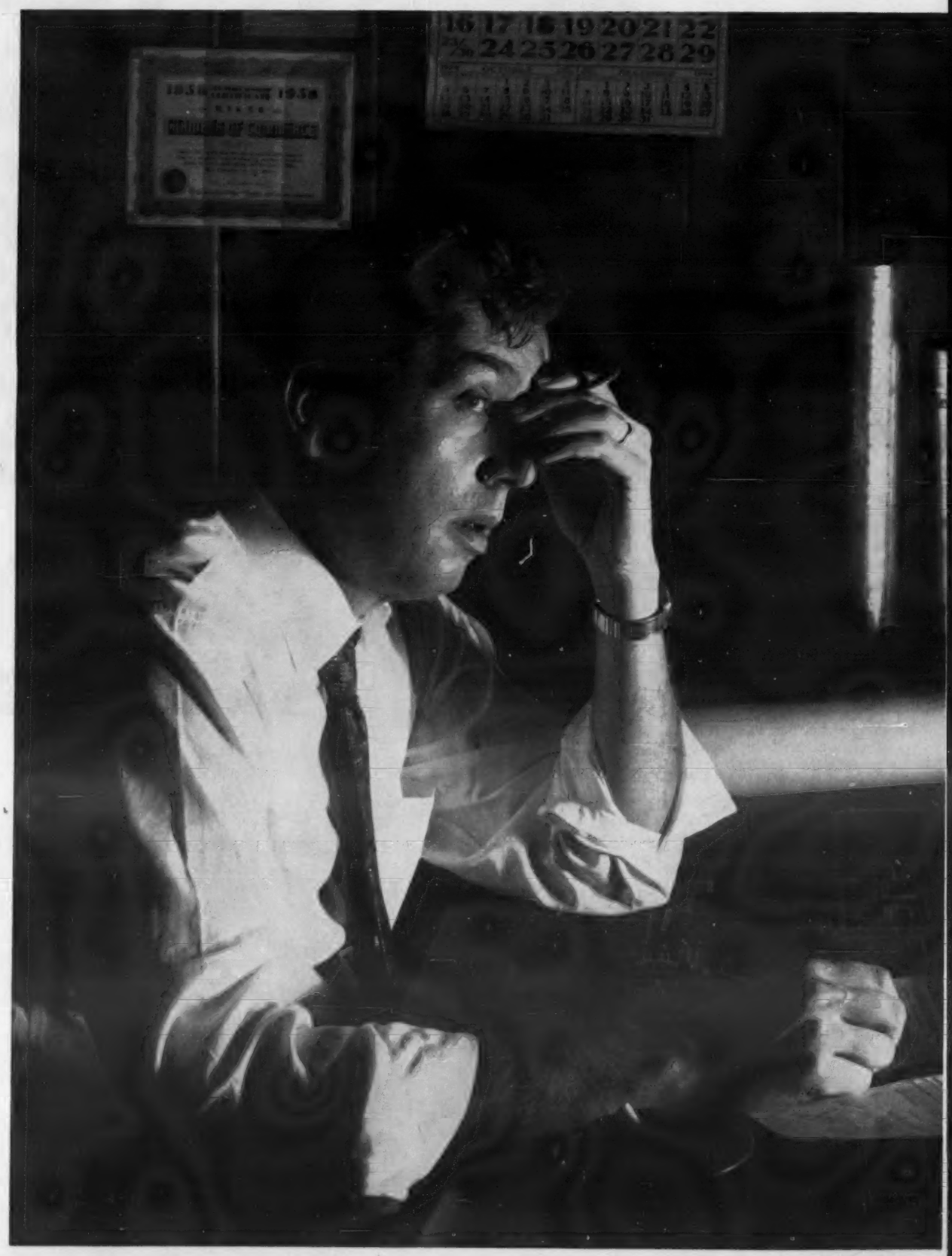
Tribute is due the chairman of our product sections, for it is the guidance and leadership of these gentlemen that has helped write a record of accomplishment. In recognition of the importance of product section chairmen to our activity, we recently instituted periodic meetings where the chairmen and vice-chairmen meet with the executive committee for an exchange of ideas and to better communicate and follow through on the accomplishment of desired industry objectives. Copies of the minutes of executive committee meetings have also been provided to each board member and to product section chairmen—again with the feeling that informed chairmen can be more effective.

Planning for Future

Your executive committee has not overlooked the responsibility of future long range planning. As a result of reviews and proposals by your planning committee, seeds have been planted and cultivated which will serve to increase the stature of ARI.

Your planning committee also developed a voluntary financial data survey that holds promise of being highly informative to participating members. The initial report included figures from 14 submitting component manufacturers and a separate report covering a review of financial data submitted by 29 end product and component manufacturers.

Also under review by the planning committee is a study of warranty data. During a re-



cent meeting a recommendation was made that ARI attempt to determine the proper and desirable coverage of warranties. We will then endeavor to frame a questionnaire to be approved by the executive committee and sent to all ARI members. Finally, the institute will prepare a summary of the replies for distribution to all participants.

They have further developed a systems group study. Purpose of this study is to examine the desirability of dividing ARI product sections and committees as between air conditioning and refrigeration.

Your executive committee has also asked that product section and committee chairmen endeavor to hold their meetings in Washington where all staff personnel and facilities are available. This will add to the efficiencies of the staff and reduce travel costs to the association. In most cases, section or committee members would be traveling equivalent distances anyway.

Many of our members have been restricted in their potential progress by limitations in the facilities or requirements of Underwriters' Laboratories. A Committee was set up and as a result of a joint meeting some real progress was realized. We have been assured of UL cooperation in reducing this bottleneck.

'Lost' Members Returning

When the original reorganization program was submitted it was understood that we would experience a loss in membership—and this proved true, but not to the extent expected. We have recently been receiving applications for re-admission from some of these former members.

Total membership in itself is not important. Our goal has been and I am sure will be to have a membership composed of those who recognize their obligation to support any and all activities which contribute to the growth and progress of our industry—those who wish to participate and share in the activities which will bring this industry to its rightful place and maturity in our economy.

In the field of inter-association relations, we have taken a number of steps in the direction of creating a stronger feeling of industry unity. Your officers and staff members have attended meetings of allied associations and societies—in some cases in the capacity of programmed speakers—in others for the sake of cementing good relations.

We believe that there is a new feeling of industry unity—a unity which extends to all segments of the industry—manufacturers, contractors, dealers, wholesalers, service engineers, and other groups and this is vital to the well-being of our still young but dynamic industry.

Cooperating With Other Groups

We at ARI have strengthened our inter-association relations committee, with a view to encouraging this activity in all of its legal aspects.

Other sub-committees have been or will be named by ARI to foster cooperative efforts with other industry groups. ARI's efforts in industry promotion, industry standards, and in many other fields are all aimed at a stronger industry "across the board." We believe that other industry groups have a similar goal. We firmly believe that by cooperating we can achieve it sooner.

As an example of the results of our intra-industry activity—we have with us some representatives of other industry groups who have come to our meeting with the same idea of industry unity in mind.

First of all it is appropriate for us to recognize ARW who this year is celebrating its 25 years of service to our industry. With us are Bill Miessemer, president of ARW and Thom Muir, executive vice president. Bill and Thom have had an outstanding year of accomplishment.

From the Refrigeration Service Engineers Society we have with us John Spence, RSES educational director, who is representing good friend Mac McDermott. They, too, have been making 1960 a year of record accomplishment.

Also with us is Tom Alexander of Denver, president of RACCA. They're having a meeting in Miami Beach coincident with ours. If ever any of you have the opportunity to attend one of their annual meetings please do so, as you will find displayed the best example of voluntary sharing of information that it has ever been my pleasure to witness. They have a dynamic organization which is anxious to cooperate with all other segments of our industry.

Praises Board, Staff

In conclusion it is certainly apropos to count our blessings. Your board of directors, planning committee, and executive committee have all been extremely devoted. Attendance at all meetings has been almost unprecedented. Your managing director, George S. Jones, Jr. and his staff have done a superb job in carrying out the tremendous work load in getting our reorganization under way.

In formally taking office I indicated that on behalf of your new officers and board we would accept the challenge with optimism and that with your all-out support we would have a term filled with accomplished objectives and write a record which would be a credit to you and ARI. It is therefore a privilege to have presented to you today, a year and a half later, this report which indicates that you have been generous in your support and that your elected officers have met the challenge and ARI is intact—the programs that you approved initially have been substantially fulfilled.

To Study Electric Heating of Homes

WASHINGTON, D. C. — A field investigation of electrically-heated houses will be conducted by the Small Homes Council-Building Research Council of the University of Illinois as a result of a grant made to the university recently, according to the Building Research Institute here.

Being underwritten by Commonwealth Edison Co., the heating study will attempt to develop information on the relationship of the amount of electricity actually used to heat a home with calculated estimates for the same home.

What happens when the "honeymoon" is over?

Promises come a lot easier than fulfillment!

Heating and air conditioning dealers soon find that the paid vacations and other special inducements offered by different manufacturers fade into memory along with the rose-hued words of courtship. Suddenly you're faced with the stark reality of making money with the line you're handling. What then?

That's when the "ordinary" things become all-important . . . the backing you get from the factory, the sales helps, the training schools for your men, freedom from shipping errors, the many ways a manufacturer can help you sell more efficiently and make more money.

With Lennox there are no gimmicks, no verbal smoke screens or razzle-dazzle —just an honest effort to help our dealers make money the year 'round—every year.

If *you* want help instead of promises, it will pay you to investigate Lennox now. It's the line designed for the long pull.

LENNOX Industries Inc.

Established 1895

Marshalltown, Iowa • Columbus, Ohio • Syracuse, N.Y. • Fort Worth, Texas
Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

They'll Do It Every Time

by Jimmy Hatlo

AT LAST, DURANCE THE INSURANCE MAN GETS HIS PROSPECTIVE CLIENT ALONE AND IN A SIGNING-UP MOOD···
WELL, AT LAST WE CAN RELAX··· I'VE BEEN WANTING TO SHOW YOU THIS NEW POLICY····IT FITS YOUR NEEDS TO A T··· I DON'T CARE HOW MUCH INSURANCE YOU ALREADY CARRY···
THEN SOME PEST ALWAYS BUSTS IN OUT OF NOWHERE AND BREAKS THE SPELL····
HEY, DIPTHONG, OL' BOY!! HOW YA BEEN? HEY! I GOT A BOX··· C'MON···LET'S GO TO THE BALL GAME!!
FOOSTER!! HI···BALL GAME? HEY, YEAH···SURE THING! PARDON US, SILO···GOTTA DASH····
NOW··· IF YOU'LL JUST···
THANK AND A HAT TIP TO POST: EMMETT CURRAN, 377 S. HARRISON STREET, E. ORANGE, N.J.
10-29
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Customers Like Longer Warranties; Hence We Should Reappraise Them

POPULAR song title, "What Lola Wants, Lola Gets," may have some bearing on the long-suffering (and long-suffered) guarantee controversy. "Lola," in this case, is the buying public—and, in particular, women consumers. They are our ultimate bosses.

What the customers want, we'd better give them, if we want to stay in business for any length of time. Mark this: For quite awhile customers have voted overwhelmingly for *guaranteed (trouble-free) operation.*

Manufacturers in our industry recognized this fact long ago by instituting four-year guarantees on end use products. In so doing, a simulated "insurance policy" has been prepaid in the quoted price, so as to spread the risk of operational failures (and subsequent irate users) over all installations.

However, the "Man in the Middle" (wholesaler, contractor, dealer) hasn't been happy about this policy, universally. In practice, he has been "caught in the middle"—between uninformed consumer expectations and unrealistic manufacturer allowances.

Obviously, revision is needed to bail out the contractor-dealers.

Normally, when a small businessman is pinched economically, he yelps. With his plight in this particular situation we sympathize enormously. We're small businessmen ourselves. Even so, the NEWS has resisted tremendous personal pressures to editorialize against warranties *per se.*

Reason: they protect the public.

Hub of these "middleman" arguments against four-year warranties was, until recently, the example of the mighty automotive industry and its 90-day guarantee on new cars.

"If they can get away with 90 days, why must we put up with four years?" was the seemingly unanswerable position taken by dealer-contractor-wholesaler groups.

Recently, however, automobile manufacturers have pulled the rug from underneath this logically untenable analogy. They've upped their service warranties on 1961 models to 12 and even 24 months. Why? Consumer research told them that's what they should do.

"What Lola wants, Lola gets." And Mrs. Buyer has decided that service costs should be woven into initial price-tags all across the boards. It has become obvious that *continuous operation* is what she desires most and demands of mechanical products.

This human desire for safety and security especially is true of air conditioning in homes, offices, and shopping centers; with refrigerators and freezers; with cars —and with any mechanical device upon which women buyers depend.

It would appear as if extended warranties are here to stay, good friends in our industry. Let's *readjust them* rationally; then learn to live with them. We've gone too far to substitute a Lolita for necessary old Lola.

Let's Smite the Gold Goblins

Never has there been so much pressure on American businessmen to sell more goods abroad.

Bradley Fisk, assistant secretary for international affairs of the U.S. Department of Commerce, reveals that only 12,000 U.S. corporations currently are engaged in international trade. "Several hundred thousand more should be," he adds.

How do you crack the world market, and meet increasing foreign competition at the same time? Here's an answer supplied by Ralph Cordiner of General Electric:

"European and Japanese companies excel," he elucidates, "in products for people whose per capita income is about $500 to $1,000 per year.

"American firms have developed outstanding consumer products for families with higher incomes. Those more elaborate designs will sell well in the expanding upper-income markets overseas, if we promote them."

To which observation, we might add: in air conditioning and refrigeration knowledge, techniques, and products, the U.S.A. enjoys a virtual monopoly. Let's exploit this uniquely favorable situation!

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 91, NO. 15, SERIAL NO. 1,655, DECEMBER 12, 1960

From the Files of the News

25 years ago . . .

Editor George Taubeneck will present a paper on the development of the electric refrigeration industry before the 1936 World Congress on Refrigeration meeting in The Hague, Holland.

Evidence that air conditioning is rapidly becoming a year-round business is shown in the notable sales increases recorded in Washington, D. C., Philadelphia, Baltimore, Rochester, and Chicago during the first nine months of '35. Washington showed biggest gains, with installations totaling 132, compared to 140 for all years prior to '35, and not including the 19 installations in Federal Government buildings.

Air conditioning was the big theme of the 31st annual meeting of the American Society of Refrigerating Engineers where technical aspects, general aspects, and applications of air conditioning were discussed. Also news was the election of L. S. Morse as president; in a tradition upset, automatic election to president of the first vice president was sidestepped and Morse, a council member, was elected instead in recognition of his signal contributions to the science of refrigeration and for his outstanding executive abilities.

Although the "New York World-Telegram" asserted that passage of the ordinance would give duPont interests "an effective monopoly" on the air conditioning business, hearings on the proposed local code relating to refrigerating systems brought forth no pointed objections from spokesmen of the air conditioning industry, representatives of users or prospective users of systems.

An air conditioning system consisting essentially of four separate York "Freon" water-cooling systems, identical in design, of 254 tons capacity each, and air washers and fans circulating approximately 625,000 cfm, will provide year-round air conditioning and ventilating service for the new windowless municipal auditorium in Kansas City. The equipment is thought to be the largest single refrigerating system of this kind assembled in the middle west for air conditioning purposes.

"Now Hale's makes its own weather" advertises this Sacramento, Calif. department store now equipped with 24 Westinghouse air conditioners circulating 5,000,000 cu ft of air per hour.

10 years ago . .

After more than 300 people suffered from food poisoning because a Nebraska bakery shop neglected to refrigerate its cream pies, the Nebraska Public Health Association organized last week to encourage, among other things, the proper preservation of foods by refrigeration throughout the state.

An air conditioned, glassed-in produce department, with its controlled 40-50° temperature extending the salable life of most perishables by 300%, is an unusual feature of a Lakewood, Colo. supermarket seeking to cut down spoilage and other loss.

More cutbacks in the offing as the National Production Authority hints possible production limitations of products containing copper, possible banning of use of scarce metals in "non-essential" goods, and a 35% cutback is ordered in consumption of primary nickel for non-defense purposes during the first half of 1951 while a 20% reduction in civilian production and use of zinc takes effect Jan. 1.

The del Lago, a new two million dollar hotel under construction in Venezuela, will be air conditioned by two new Carrier reciprocating refrigeration machines having a combined capacity of 190 tons to supply 140 individually controlled room fan-coil units. Nine Carrier Weathermakers will condition the air in all public areas and the hotel's five main floor stores.

The NEWS reported on "freeze drying," an important new development in the science of manufacturing drugs and biologicals that offers new possibilities for low temperature refrigeration.

A Primer on Air Cleaning

Larson Reviews Subject Before RSES

PORTLAND, Ore.—"The soot fall in our large cities can be measured in terms of tons per square mile per month.

"Considering that the average person spends more than 80% of his life indoors and takes in about 34 lbs of air each day (compared to 3½ lbs of food and 4 lbs of water) and receives about 60% of his energy from this air, isn't it rather surprising that we have not made a greater effort to clean up the cesspool we are creating in our atmosphere?"

These introductory remarks were made by W. H. Larson, vice president, R. E. Chase & Co., Tacoma, Wash., in a talk before the annual convention of Refrigeration Service Engineers Society.

Importance to Industry Cited

In addition to the effects of air contaminants on human beings, Larson called attention to the importance of clean air to many industrial processes, electronic equipment operation, textile and paper manufacturing, hospital surgery.

Since particle size primarily decides how the air is to be cleaned, Larson described how particles are measured; in microns, or one millionth of a meter. For comparison, a human hair is 75 to 100 microns in diameter. A blood corpuscle 8-10 microns in diameter. A 20-micron particle is the smallest size that can be seen with the naked eye. One point emphasized by Larson was the difficulty of measuring particles due to their lack of uniform shape. "Appropriately magnified, they are likely to appear as rough rocky outlines, sticks, spiney chunks, or strings."

Classifies Filters Into Three Groups

Limiting his discussion to air filtration at the point of usage rather than controlling dust at its source, Larson classified the air filters commonly used into three general principles of operation—viscous impingement, sieve, and electrostatic precipitation.

"Probably the most common filter type is the viscous impingement unit," he said. "It is commonly seen in the disposable furnace filter, the metal washable filter, and the automatic oil bath filter and automatic roll filter." Viscous impingement relies on two components, one to cause the air stream to change direction rapidly as it passes through the filter, and the other, a sticky coating to hold the particles which collide with it.

"The collision principle limits the effectiveness of this type of filter to the larger size of dirt particle."

The sieve filter relies on a filtering medium which will allow air to pass, but due to its porous structure will not allow dirt particles over a certain size to pass. "The scope of efficiency possibilities, and physical construction is extremely large," stated Larson. "It is the sieve principle that is used in the 'absolute filter.' Here, extremely fine fibers of asbestos or glass are used in specially designed filter cells to give the highest orders of air cleaning in use today.

Larson considers electrostatic precipitation the most interesting principle of dust collection, "since it is effective in the high efficiency ranges and since it relies on a controllable physical action, and reaction."

Describing the operation of the electrostatic precipitator, he continued, "A given particle is carried through an electrostatic field strong enough to give the particle its charge (generally positive). The particle is then carried between parallel plates, one charged positively, and one grounded negatively. The positively charged particle is attracted to the negative plate. The velocity of the particle, as governed by the air stream in which it is carried, is the most critical factor in realizing the successful operation of this principle."

Since the particle will eventually lose its charge, it was pointed out that some means, such as a sticky adhesive coating is used to allow less frequent cleaning. The collector plates can be automatically washed in a number of ways.

All electrostatic precipitators rely on a power pack which converts the 110-volt a.c. live voltage to a high d.c. static voltage. Today, units may be found from those which produce 9,000 volts for both ionizer and plates to the high velocity units which have 13,000-volt ionizers and 4,000-volt plate circuits.

Larson recommends the installation of a voltage regulator because of high voltage amplification. Primary line voltage variations may otherwise result in intermittent performance.

'All Filters Require Maintenance'

"In spite of promotional inferences," the speaker insisted, "all filters require maintenance. The collected dirt must be removed one way or another, and the mechanical refinements must be cared for just as with any other piece of equipment."

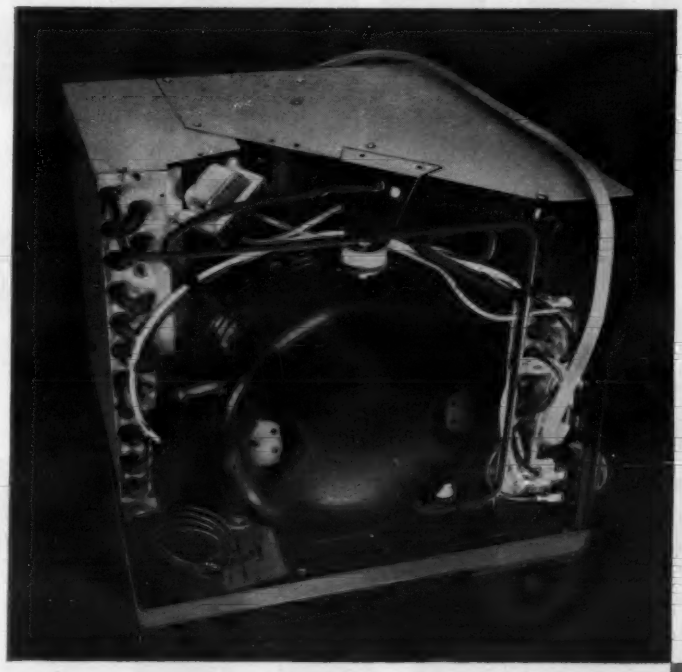
"The filter can be maintained by replacement, by a cleaning process or by the particular requirement of an automatic machine." Throw away filters should be thrown away when they are dirty. "Trying to renew this type of filter is almost certainly always false economy.

"Except for the plate precipitators, visual inspection is not the best indicator of when maintenance is required. A simple draft gauge is the best guide to filter maintenance."

Larson also discussed the companion problem in air cleaning, the removal or control of odors.

The four general ways to combat odors described were by covering them with another odor, by somewhat desensitizing our sense of smell, by diluting them, or by removing them from the air.

"However," he stated, "true control is best achieved by positive removal of the odor from the air, and this removal is accomplished with activated carbon which is capable of holding about one quarter to one third of its weight in odorous material."



WOLVERINE refrigeration tube contributes to Gibson dependability

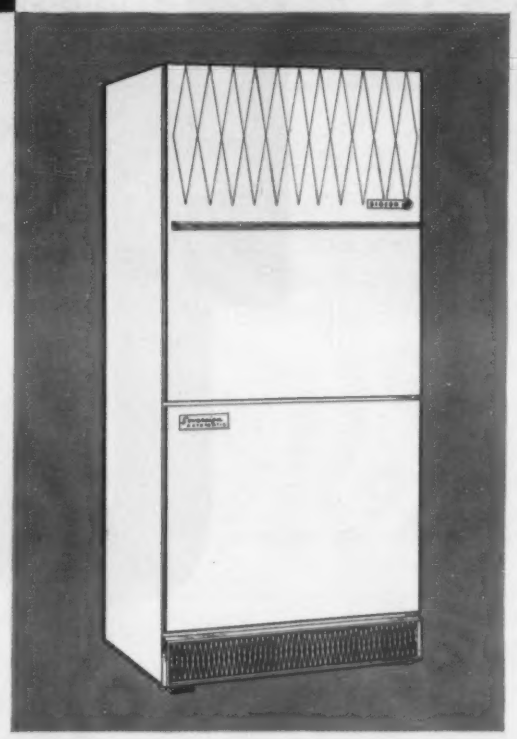
One of America's fastest growing refrigeration and air conditioning names is that of Gibson Refrigeration Division of Hupp Corporation, Greenville, Mich.

Gibson is widely recognized for the quality of its products and for its unique and aggressive merchandising of its extensive refrigerator, freezer, air conditioning and dehumidifier line.

Each year, Gibson uses tens of thousands of feet of Wolverine copper refrigeration tube in the production of its evaporator and condenser coils. Gibson also specifies Wolverine Capilator® as the capillary pressure reducing tube between these coils.

Like other leading American manufacturers, Gibson Refrigeration Company knows that it can depend on the constant high quality which Wolverine Tube Division of Calumet & Hecla Inc., builds into its tubing.

Your company, too, can benefit from Wolverine Tube's sound engineering, years of experience and the overall Tubemanship of its skilled employees. Next time you order copper, copper alloy or aluminum tubing—specify Wolverine. You'll be in good company.



WOLVERINE TUBE
DIVISION OF
Calumet & Hecla, Inc.
DEPT. H, 17246 SOUTHFIELD RD., ALLEN PARK, MICH.
Manufacturers of Quality Controlled Tubing

J-9164

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.

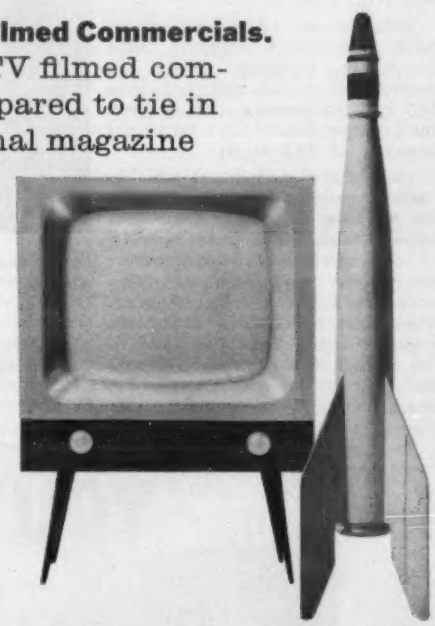
Count Down

FIVE FOUR THREE TWO ONE FIRE!

PUT YOUR CENTRAL AIR CONDITIONING SALES "INTO ORBIT" WITH THIS BIGGER, BETTER-THAN-EVER 1961 GENERAL ELECTRIC SALES PUSH!!!

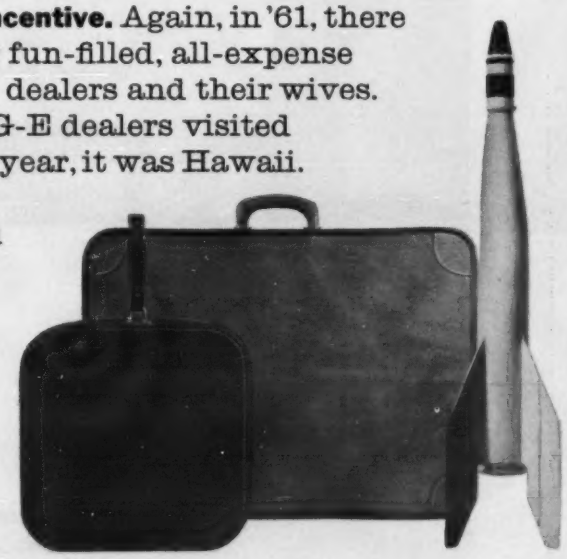
5 Strong National Advertising With A New Look. Full page magazine ads will reach your best prospects—the leaders in better living who have the money to buy. These influential people will be told that "the difference in the air is General Electric Central Air Conditioning"—and why. Here is a fresh, new and competitive approach to air conditioning advertising that will help keynote your local sales effort.

4 Attention-Getting TV Filmed Commercials. A series of 40-second TV filmed commercials have been prepared to tie in directly with the national magazine advertising. They will be aired in markets across the nation with 20-second "tags" featuring local dealers. Here, again, the theme is "the difference in the air."



3 Valuable Consumer Incentives. Valuable incentives, such as have been used so successfully by many dealers in the past, will again be offered to help stimulate sales in both the consumer and builder markets. As usual, they will be items carrying a substantial retail price, but will be made available to you at just a fraction of cost.

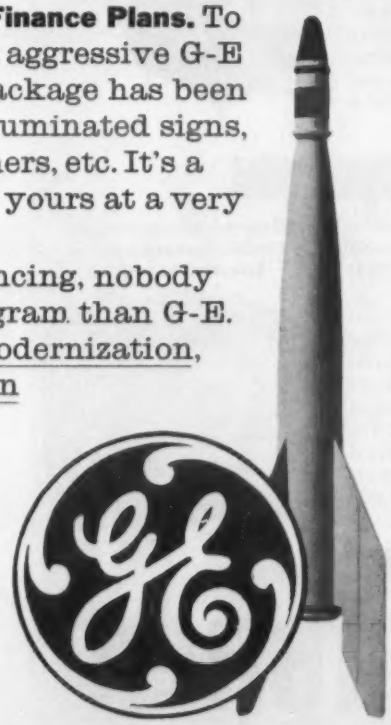
2 Dealer Trip Incentive. Again, in '61, there will be another fun-filled, all-expense trip for eligible dealers and their wives. This year, 600 G-E dealers visited Bermuda. Last year, it was Hawaii. And for 1961, the destination is...SPAIN!



1 Identification Program & Finance Plans. To "spotlight" you as an alert, aggressive G-E dealer, an Identification Package has been developed that includes illuminated signs, letterheads, uniforms, banners, etc. It's a terrific value, and it can be yours at a very nominal cost.

And when it comes to financing, nobody offers a more complete program than G-E. Work-In-Process, Home Modernization, Skip-Payment, and Add-On are among the plans featured.

This is your bang-up G-E promotional package for 1961—everything designed to make your selling job easier, to make your profits rocket!



FIRE... off this coupon today and get ready for the greatest season yet! (Or contact your nearest General Electric heating and air conditioning distributor for full details.)

General Electric Company — ACN-12-12
Air Conditioning Dept.
Tyler, Texas
Attn. Mr. J. J. Heffernan

I would like complete information on G-E's great new sales program for 1961.

Name_____

Firm_____

Address_____

City_____

County_____ State_____

GENERAL ELECTRIC

Air Conditioning Department, Tyler, Texas

13-Cu Ft Models Expected To Lead G-E Line

● Two new 13-cu ft combinations are expected to be the sales leaders in its 1961 line of 11 refrigerator models with capacities ranging from 10 to 15.5 cu ft, according to General Electric Co., Dept. AH&RN, Appliance Park, Louisville 1, Ky.

Both the new 13-ft combinations have zero-degree freezers with 3.1-cu ft capacity. Both are double door models and both have 10.1-cu ft automatic defrost fresh food compartments for total actual capacity of 13.2 cu ft.

The deluxe model, available in "Mix-or-Match" colors, has swing-out shelves, ice-ejector tray with storage bucket, foot pedal opening of the refrigerator door, butter conditioner, and a removable aluminum panel on the freezer door. The panel provides a decorative accent but can be removed to leave the freezer door the same color as the rest of the combination. Or, the panel can be covered with paper or fabric.

The standard model has the same capacity but has slide-out shelves and a butter compartment. Both have removable covers over ice cube trays for full utilization of freezer space. In addition to the combinations described, an 11.5-cu ft single door model with a 2-cu ft freezer and automatic defrost refrigerator section also is offered.

At the top of the line are four "Frost-Guard" models, two with 13.6-cu ft capacity. Both of these have roll-out 3.1-cu ft freezers but one has swing-out shelves and "Freeze-N-Store" ice service in which trays are simply flipped over, ejecting ice cubes into a storage bucket. Trays can be refilled with water from a pitcher without being removed from the freezer. The two other Frost-Guard models are 5-cu ft roll-out freezers for total storage space of 15.5 cu ft. One has Freeze-N-Store ice service, the other an automatic ice maker.

Other units offered for 1961 include four dial defrost models, two 10-cu ft capacity and two with straight line design and 11.8-cu ft capacity.

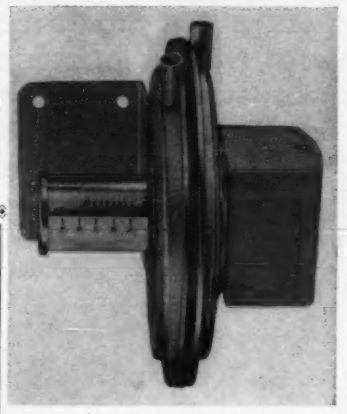
General Electric also has announced three new freezers for 1961. All are upright models and have straight-line design with no coils on the back so that the fronts of freezers line up with base cabinets. In addition, all three models have special door hinges permitting snug installation against a side wall.

Recorder Determines Moving, Idle Truck Time

● A prime aid in determining moving and idle time of trucks is the "Servis Recorder," according to The Service Recorder Co., Dept. AH&RN, 1011 Rockwell Ave., Cleveland 14, Ohio.

"The units furnish records of busy or stopped time which will be valuable to several company departments," the company said. "They provide control over avoidable delays, over speeding and accidents, over the percentage of working and waiting, and over expensive night work and overtime. These accurate and permanent charts enable management to schedule and maintain the most effective operation of the trucks and personnel.

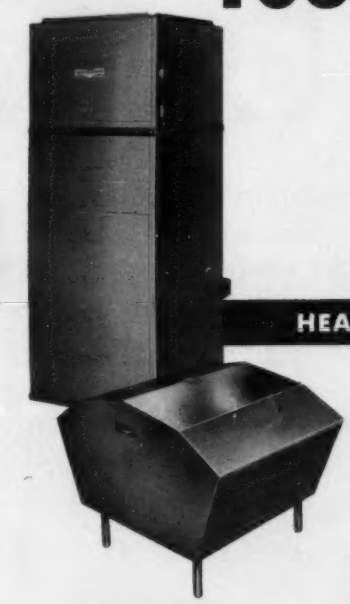
"The recording unit is easily installed—a mechanic merely bolts it inside the vehicle cab. No wires, pens, or ink are involved, and all the supervisor has to do to start the mechanism is to insert a wax-coated circular chart and wind the clock movement. A sapphire stylus on a pendulum marks busy and idle time whether the normal motion of the truck causes the stylus to mark a broad line, or a steady narrow line during stops."



YOU'LL NEVER MISS A SALE!

IF YOU CONCENTRATE ON THIS GREAT LINE

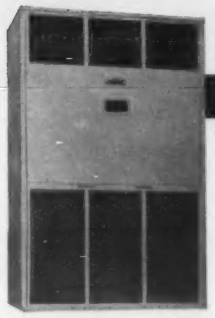
Soundly engineered products, featuring advanced designs for every type of heating and cooling equipment...built by an organization nationally famous for quality manufacturing.



HEAT PUMPS

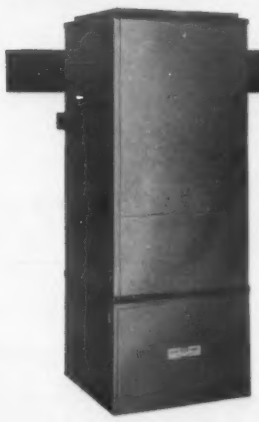
Both indoor and outdoor sections of the Stewart-Warner Heat Pump are distinguished by advanced engineering features. The indoor section consists of a heating-cooling coil, a blower unit and an optional electric furnace for supplementary resistance heating.

The outdoor section has numerous advantages which make it completely outstanding. It is attractive in appearance and because of the tilt-back design of the cover is the easiest unit on the market to install and service. The ingenious design of the unit also permits more effective defrosting with none of the operating defects previously so common.



AIR CONDITIONING AND HEATING UNITS

Stewart-Warner heating and cooling products for residential and commercial installation are the perfected results of years in the manufacture of home comfort equipment. You really have to see Stewart-Warner oil and gas furnaces and air conditioning units to get the full flavor of their quality design, rugged construction and distinctive styling. All furnaces are adaptable to summer cooling and a full line of store and office remote air conditioners up to 7 tons is available.



ELECTRIC FURNACES

Here is the most completely modulated electric furnace on the market! The Selective-Sequencer regulates the heat supply to *exactly* match the heat loss in mild or cold weather.

Depending upon the required capacity, the furnace section contains from 3 to 9 pairs of *sheathed* Calrod heating elements, each pair with an output of approximately 10,000 BTU/hr. The elements are controlled by the Selective-Sequencer which automatically cuts them in and out to maintain the desired heat output. This modulated operation and constant circulation of warmed air keeps temperatures uniform from floor to ceiling. 23,000—92,000 BTU/hr.

Only the Stewart-Warner Electric Furnace has this Selective-Sequencer

Write for full information on the Stewart-Warner Direct-Factory Franchise

Symbol of SW Excellence

STEWART-WARNER

HEATING AND AIR CONDITIONING DIVISION • Dept. BA-120, Lebanon, Indiana

Pressure Switch Features Accuracy

● A new differential pressure switch "designed for extremely accurate and reliable control in pressure ranges too low for conventional switches" has been announced by F. W. Dwyer Mfg. Co., Dept. AH&RN (AG-8), P.O. Box 373, Michigan City, Ind.

"Dead band is unusually small," the company stated. "One model of this new No. 1630 Series Switch, for example, may be set to open a circuit on a pressure differential increase of only .05 in. of water and to close on a decrease of .03 in. Repetitive accuracy is within 1%—there is virtually no error due to drift or hysteresis.

"This switch is suitable for such applications as liquid level controls, induced draft interlocks, exhaust hoods, dust collection systems, and air filters.

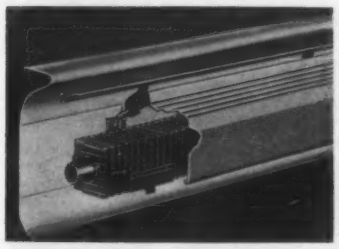
'Fluxcor' Assures Right Amount of Flux

● A new silver brazing filler metal with a flux core for faster and easier brazing—claimed to be the first such alloy composition to be manufactured employing this principle—has been placed on the market by Air Reduction Sales Co., a division of Air Reduction Co., Inc., Dept. AH&RN, 150 E. 42nd St., New York 17, N. Y.

Airco's product, designated "Aircosil Fluxcor 45," assures the correct amount of flux for the size of the brazing alloy used, according to the company.

The alloy composition is available in approximately 70 to 80-oz coils of $\frac{3}{64}$th in. equivalent size. Equivalent size indicates the amount of silver alloy available in the composite, expressed as a solid wire. Estimates on material requirements for any particular job are simplified by supplying Airco's new Fluxcor in sizes which match standard filler metal sizes, it was stated.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

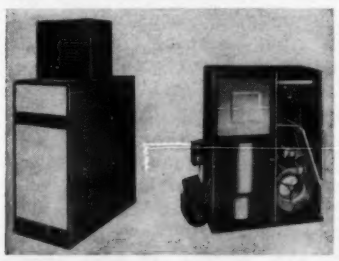


Improve Cradle Slide For Baseboard Element

● The development of a new, improved cradle slide for use with its baseboard heating elements has been announced by Edwards Engineering Corp., Dept. AH&RN, 101 Alexander Ave., Pompton Plains, N. J., developer of the "Zone-A-Matic" packaged zone control heating system.

The new slide permits free longitudinal movement of the baseboard element during periods of heating expansion and cooling contraction, and is designed to eliminate metallic noises.

Installation has also been simplified. The new cradle slide snaps into place on all Edwards baseboard units. On the Edwards packaged heating elements, the slide is furnished already in position and ready for use.



Henry Bows Four Oil-Fired Furnaces

● Four new models of "Moncrief" oil-fired winter air conditioning units have been announced by The Henry Furnace Co., Dept. AH&RN, Medina, Ohio.

Three sizes of the furnaces—84,000, 95,000, and 112,000 Btu output at the bonnet—will be assembled and internally wired at the factory and will be offered with a choice of cabinet styles, one having the burner exposed and the other with a vestibule which conceals the burner. A larger, 140,000 Btu output size, will be shipped unassembled and will be offered with the vestibule cabinet only.

High air deliveries, which permit the addition of a summer air conditioning cooling coil, are achieved with standard equipment blowers, the company stated.

The furnaces have a heavy gauge heat exchanger with a round combustion chamber which is lined with a heavy-duty refractory firebox.

MIGHTY MITE

Makes Motor
DRIVEN APPLIANCES SAFE!

MIGHTY MITE MOTOR PROTECTORS

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street Akron, Ohio
SAA 2335/84A

Charger Meters Gases Into Pressure System

● The Nielsen "Air Charger" offers a new approach to the problem of introducing desirable volumes of air or other gases to pressure systems, according to the Nielsen Mfg. Co., Dept. AH&RN, P. O. Box 5083, Eastmont Station, Oakland, Calif.

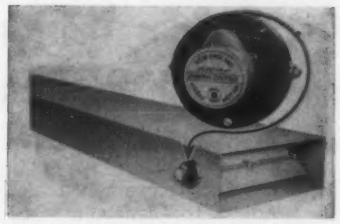
Operating through the vacuum generated by a patented venturi action, the Nielsen Air Charger provides a continuous metering of air or other gases into any pipeline carrying a flow of liquid under pressure, the company said.

"Tested in over 3,000 installations to date, the results indicate that the Nielsen Air Charger can handle the requirements of water pressure systems with storage capacity of over 2,000 gals," it was stated. "Other applications where the Nielsen Air Charger has demonstrated its ability include commercial refrigeration cooling towers (CO_2 for algae inhibition), chemical processing complexes, etc.

"Nielsen Air Chargers already in production can handle water flow from 360 to 6,000 gph at pump pressures varying from 25 to 90 lbs. Larger capacity designs are under development."

Electric Control Adjusts Duct Damper

● A new electric damper control with features which "provide a simple and inexpensive system for individual room temperature control" of air heating or cooling installations has been announced by New England Gear Works, Dept. AH&RN, South End Rd., Southington, Conn.



The compact, 24-volt, direct-drive device features machine cut steel gearing, aircraft type switches, and 360° adjustability for easy positioning of the damper vane to the proper location after installation, it was indicated. The control will fit the smallest size heating duct and operate any size damper up to 36 in. in length, the company claims.

The auxiliary switch, used to actuate the burner circuit, is built into the control.

For "very rapid" installations, completely assembled round duct sets are available with the damper control, damper vane, and position indicator already mounted on a short section of round duct.

Serviced by
RALPH COOLER
HI 3-3142
8888 Walnut

Name Stickers Attach To Units, Invoices

● The availability of new personalized name sticker "advertisements" for those in the service trades has been announced by Bolind, Inc., Dept. AH&RN, Boulder 15, Colo.

"These ½-in. by 1⅝-in. stickers are imprinted with firm name, address, and phone number," it was explained. "Once placed on a TV set, air conditioner, heater, etc., they act as a helpful reminder to your customers that you are the specialist to call for future service. Also use them on invoices, stationery, envelopes, advertising literature."

Price is $2 for 500 black on white labels or for 250 labels on gold gummed paper.

Merry Christmas!
(H&H can help you make it last all year long)
Better Brass and Copper Products Since 1930
This year, why not give yourself the best present of all — the trouble-free, worry-free quality and service you are sure to get from a dependable tubing source such as H & H. For over 30 years, H & H Tube and Manufacturing Company, has been helping designers, purchasing agents and other buyers of brass and copper tubing make their jobs easier. Perhaps we can help you, too.
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271 North Forman Avenue, Detroit 17, Michigan • Offices from Coast to Coast
SEAMLESS
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STRAIGHT AND COILED TUBE
TUBULAR PARTS
PLANNED FOR PRECISION

NHAW Ladies Workshop Decides There's No 'Ideal' Wife— If There Was, There Would Be No Ideal Setting for Her

By Terry Treiber

DETROIT — "How can our wives put up with us?" NHAW executives ask. "Do they really mind those 'nights out' with customers? If my wife is overly-ambitious, what does that make me? Does she really care?"

The "closed door" Monday afternoon Ladies Workshop Session of the Northamerican Heating & Airconditioning Wholesalers Association meeting here in Detroit found some 60 wives of members pursuing such "Problems of the Heating and Air Conditioning Executive's Wife." A five-member panel, guided by Wayne County's marriage counselor, Dr. Katherine B. Greene, tackled a bevy of "loaded" questions initiated earlier by NHAW husbands.

It took less than an hour for the ladies to conclude that "there is no such thing as an ideal wife," and even if there were, the circumstances in which to place her would never be "ideal" — particularly marriage to an NHAW man!

In Dr. Greene's opening remarks, this problem of "idealism" was introduced. Greene described the specialized air conditioning and heating executive as a "new breed," facing new challenges and breaking old established patterns of business behaviors and systems. Constant change becomes the only dependable rule, and "ideal" becomes obsolete.

The purpose of the panel was to suggest means of bettering the complex relationships between the harried "specialist-type" executives and their equally busy wives.

Mary Shoedinger initiated the discussion by studying the question, "How does an executive's wife continue to grow intellectually, morally, etc., with her husband, even if 'tied down' with a family?"

Guided by Webster's definition of "intellect" (see page 524), Mrs. Shoedinger promoted "togetherness" through faith (in self, husband, and future) and growth (by sharing mutual cultural, economic, social, religious, family, and travel interests and experiences).

NHAW WIVES weren't quite sure what to do with the male photographer that invaded their "Closed Door" session seeking "pretty poses." We must agree that they showed no inclination to run away from the problem.

Mrs. Shoedinger felt that the "key" to growth was in "taking the time." "It's easy to get tied down with domestic chores and family demands," she admitted, "but nevertheless a continuous effort must be made to keep informed on current events, and time must be spent on activities outside the home." She concluded that a wife can best assist her husband not only by keeping "informed" and "interested," but by acting as a "sounding board" to her husband's own problems, ideas, and goals.

How Can Wife Develop More Tolerant Feeling

Mrs. Walt Swenberg's answer to "How can a wife develop a more tolerant feeling and understanding of the 'entertaining husband' while she sits at home?" recognized the need for "planning." Since Mr. Swenberg must schedule his business activities, Mrs. Swenberg arbitrarily schedules his social and family activities.

Recognizing that a so-called "entertaining husband" is often required to maintain an "off-hours" work schedule, and recognizing that she is not always "needed" in such weekday dinners and conferences, Mrs. Swenberg plans family activities involving her husband for week-ends only. The Swenbergs find that by scheduling their lives, conflict is considerably lessened and "tolerance and understanding" from the wife are possible.

"How can a wife develop a more tolerant understanding of the busy executive?" Mrs. Ruth Hayes cheerfully suggested a "fight fire with fire" approach by balancing a husband's "busyness" with an equally "busy" program: read good books on how to help your husband get ahead; develop a pressing interest all your own; join organizations; seek and share advice with other executive's wives; recognize the importance of religion and sacrifice; be organized; be flexible; be yourself. Mrs. Hayes insists that the husband be "boss," and it's up to the wife to provide an atmosphere for relaxation—not competition—that will insure her a successful marriage and life.

How To Establish Rapport with Customers

In answering "How may a wife establish the proper rapport between herself and her husband's customers, suppliers, and even more important, his employes and their wives?" Mrs. Eleanor Hesling relied on her personal experience as "girl Friday" to Mr. Hesling. She finds the personal approach of sending birthday and remembrance cards to customers and employes a boon to sales and solid employe relationships.

Mrs. Hesling admitted readily to relying heavily on their company employes, but the Heslings find this no problem because

Ever hear of a bashful air-cooled condenser?

Check the new Halstead & Mitchell vertical air flow condenser

H&M's new ACV Air-Cooled Condenser with vertical air flow hates to be showy. It's so low and so quiet, you hardly know it's there—very appealing to owners, their neighbors, architects and engineers!

Roof loading is low, too, and air flow noise is directed away from surrounding structures. This delights building owners and tenants alike.

Vertical air flow models are available in 5 to 100 tons. And like all H&M Air-Cooled Condensers, the ACV series features exclusive Turbu-Flo fins, spaced wide to prevent clogging by air-borne dirt. Multiple circuiting is available for your specific needs *at no extra cost.*

Get the whole story on H&M Air-Cooled Condensers—with propeller or centrifugal fan. Ask your refrigeration wholesaler for a copy of the new bulletin AC-102. Or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

ACV SERIES — 5 TO 100 TONS

HM Halstead & Mitchell

Air-Cooled Condensers • Finned Coil Products • Water-Cooled Condensers • Cooling Towers

their employes are made to feel "needed, appreciated, and important." The Heslings annually show their appreciation by having a Christmas "open house" for employes, and they strongly recommend that other executives try this approach.

The concluding topic was Mrs. Donald Fraser's "How can an overly ambitious wife keep in harmony with her husband's company policies on promotions, organization, and social relationships?" "Lady Macbeth was an overly ambitious wife," Mrs. Fraser noted in a witty presentation of that Shakespearean "shrew" 1960-style, "and her husband was a 'white-livered' weakling." In other words, it's the husband's fault if his wife's excessive ambitions are not controlled, and it is his responsibility to control them.

In answer to the question, "How can our wives put up with us," the reply seems to be that NHAW wives "put up" cheerfully, promptly, enthusiastically, graciously, and with much less complaining than their spouses might suspect or care to acknowledge.

There is no such animal as the "ideal husband," either, but NHAW wives try to make the "circumstances in which their husband's are placed" as "ideal" as possible. "You can't ask for much more than that!" Katherine Greene remarked.

NHAW Meeting--

(Continued from Page 1)

hoses and similar items to heating wholesalers. Asked by the NEWS what its policy is on this matter, the manufacturer said, "Some of our products are sold through refrigeration wholesalers; others move through heating and plumbing outlets.

"If a plumbing and heating concern attempts to round out a normal order with a few refrigeration items, we discourage them and ask them to go to their local refrigeration jobber. And vice versa.

"Where, however, the plumbing and heating wholesaler has established a legitimate air conditioning or refrigeration department in his company, we feel it is quite proper then to supply refrigeration accessories."

Availability of Refrigerant

One significant claim made during the air conditioning committee meeting is that "We have it by way of the grapevine that refrigerant will become more readily available to us."

Somehow, electric heating got into the discussion. Several attendees were concerned to find that others were selling heating accessories and supplies to electrical contractors who were installing heating systems.

Countered one such wholesaler, "I like to think that my customers are my friends. If they are unhappy to see me making a dollar selling to a legitimate outlet, then they aren't my friends."

The Committee on Distribution Policy debated a number of pertinent issues, but did not resolve any of them in the form of a resolution. Rather, it recommended that the issues be discussed at the local level of association activity, with possibly a poll taken of the sentiments expressed by the local groups.

Classifying Membership

One issue which stirred up considerable debate was whether or not the NHAW membership should be re-classified into three groups, namely:

1. The wholesaler who is purely a wholesaler, who does nothing but wholesaling.

2. Manufacturers (as associate members) who sell only wholesalers.

3. Manufacturers who also function as wholesalers, that is, sell part of their production to wholesalers, but who also wholesale a part of their production themselves.

Harold Squire, Tiffin, Ohio, outgoing president of the association, took an active part in this discussion, declaring that "our business is at something of a crossroads as to its future directions. Is the firm that is primarily a wholesaler going to manufacture or assemble more of the products it handles, or is the firm that is essentially a manufacturer going to do more wholesaling of its products?"

One point on which there seemed to be unanimity of agreement was that of a program of getting recognition on the part of the trade and the public that the wholesale function is important in the orderly distribution of heating and air conditioning products. "Let's see if we can't kill all advertising and promotion that makes any reference to 'eliminating the wholesale or middleman function' if we set out to do this," declared one of the wholesalers.

Pricing Policies, And Procedures

Pricing policies and procedures of the manufacturers came in for considerable discussion, the major question debated being the wholesalers feeling with respect to two principal methods of pricing—one, the establishment by the manufacturer of resale price lists for all steps in the distribution of his product or a basic list price with a discount structure for the various elements in the trade; second, a policy of a net price to the wholesaler.

The consensus seemed to favor, by a considerable margin, the policy of a net price to the wholesaler, and one member asked "shouldn't the price paid by the wholesaler always be the lowest price offered by the manufacturer where the maximum quantity is purchased?"

A discussion of "what is selling below cost" led into some specific examples, such as air filters being sold below their cost but always included in a bulk sale of materials, so that the "over-all" sales was thus above cost. This led to queries about mixed sales and shipments of such products as furnaces and duct fittings for warm air heating systems. It is proper and legal for the fittings to be sold below cost just because they are being shipped with a carload of furnaces?

Some opinion was expressed for the need of surveys or studies which would analyze cost, turnover and gross profit by class of product, so that wholesalers can make the best determination of the products to emphasize to make the best possible profit, and also to put them in a position to demand higher profit margins on, for example, slow moving items that may take up a lot of storage space.

The education committee, chaired by R. J. Woodward, Palmer-Donavin Mfg. Co., Columbus, Ohio, reported that NHAW's correspondence course program is getting under way.

(Continued on next page)

...REVERE DRYSEAL COPPER REFRIGERATION TUBE

When you flare DRYSEAL for compression fittings you'll save your temper and your time. It's because of the special temper and ductility. Bending dead-soft DRYSEAL is equally easy . . . do it by hand . . . no tools of any kind are needed. And when you get your DRYSEAL take a squint at those double-crimped ends. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that it does not change the diameter of the tube. This makes it possible to pass the tube through any opening large enough for the tube itself. Economical tube sizes range from ⅛" to ¾" O. D.

Also you'll find the job-size, 50-foot, one-coil pack easy to handle, light weight, economical and sturdily made to assure protection of the tube.

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COPPER AND BRASS INCORPORATED
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Sales Offices in Principal Cities, Mills: Rome, N. Y.; Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles, Riverside and Santa Ana, Calif.; New Bedford and Plymouth, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb.

Distributors Everywhere.

NHAW Meeting--

(Continued from preceding page)

"The course in basic heating is moving," said Woodward, "and we intend to get going with courses on basic cooling, advanced heating, and advanced cooling.

"Some government authorities warn that the 60's will see a labor shortage, so we must do all we can to attract young people into wholesaling," he suggested.

Woodward mentioned that Ohio State university is setting up a pilot program offering two years of co-op training in wholesaling. Each firm interested will thus be working with two trainees, one working, the other studying at a given moment. The course covers shipping, receiving, sales desk, accounting, even lift-truck operation, according to Woodward.

"Dealers must be made to feel they are part of a team composed of themselves, wholesalers and distributors, and manufacturers."

"On the contrary, keep the dealer as far away as possible from the manufacturer."

These diametrically opposed views of the role of dealers in the distribution of heating and cooling products are typical of the differing opinions offered during the brainstorming session which was the highlight of the NHAW convention.

Some Ideas from Brainstorming

The brainstorming approach was used in an attempt "to generate new thinking on the general problem of building a better dealer organization," according to the session's moderator, E. F. Eddy, manager of marketing planning services for American-Standard.

No attempt was made to evaluate, and it was forbidden to criticize, any of the ideas offered by the panel or audience.

Some of the offerings:

Have manufacturers supply an audit of your marketing area, so you can have an accurate idea of the amount of business you can expect.

Assign salesmen on the basis of personality compatability with specific accounts, rather than by territory.

No. We must guard against allowing personality to have any effect on any aspect of our business.

Provide newsletters with product news and educational features to your dealers.

Dealers should join all local associations—price cutting competitors become friends on the golf course.

Franchising the dealers can eliminate price cutting.

Cultivate your dealerships: drop the poor ones, the weak outfits.

No. You should help the weak, not discard them.

Not at all, why spend money to create competition for your good accounts.

Give engineering service to small dealers.

Most dealers don't know what a financial statement is until the first time they are asked for one by Uncle Sam.

Homemade Bookkeeping Systems Hurt Dealers

Homemade bookkeeping systems are hurting dealers.

We've made it too easy for most dealers to get into business.

The mechanical contractor-type dealer is not really a dealer. He wants to be able to buy anyone's equipment on demand.

There is no organized trade school teaching heating.

Build training courses around service, but don't limit them to service. Remember that these are the starting places for future salesmen.

Basement operators should not be rubbed out of business, but should be qualified by proper licensing.

Be sure when you set up a dealer that he hasn't just bounced off a bankruptcy.

Don't overlook the basement operator. Many of them walk out of their basements full-grown businessmen.

Have salesmen build up friendly relation with dealer's wife, who is usually part of the business, at least as bookkeeper. You can sell her at times when the dealer is running around in his truck.

Don't forget the dealer's truck driver. He can go for a pickup to any supply house of his choosing. Include him in your promotional efforts.

All problems with dealers fall into two categories—engineering and finance.

Have all dealers establish three-year plans for growth and profit; this forces them to plan and think about their business.

Open Pricing May Be Against Federal Law

Why not establish an open price policy and do away with the 17 prices we now carry around in our pockets?

Open pricing may be against Federal law.

Supply dealers with year-end audits of their purchases.

Establish a personnel exchange, so that busy and idle dealers can trade workers.

Train dealers to sell on time-payment plan. We must meet the Sears-type competition.

Election Results

J. Orville Garret, Greensboro, N. C., was elected president of the wholesalers group. R. B. Hesling, Van Nuys, Calif., is president-elect. (The president-elect-to-president move is the only "moving through the chairs" position in the organization. All other offices are elective, explained W. R. "Wib" Bull, executive director of NHAW).

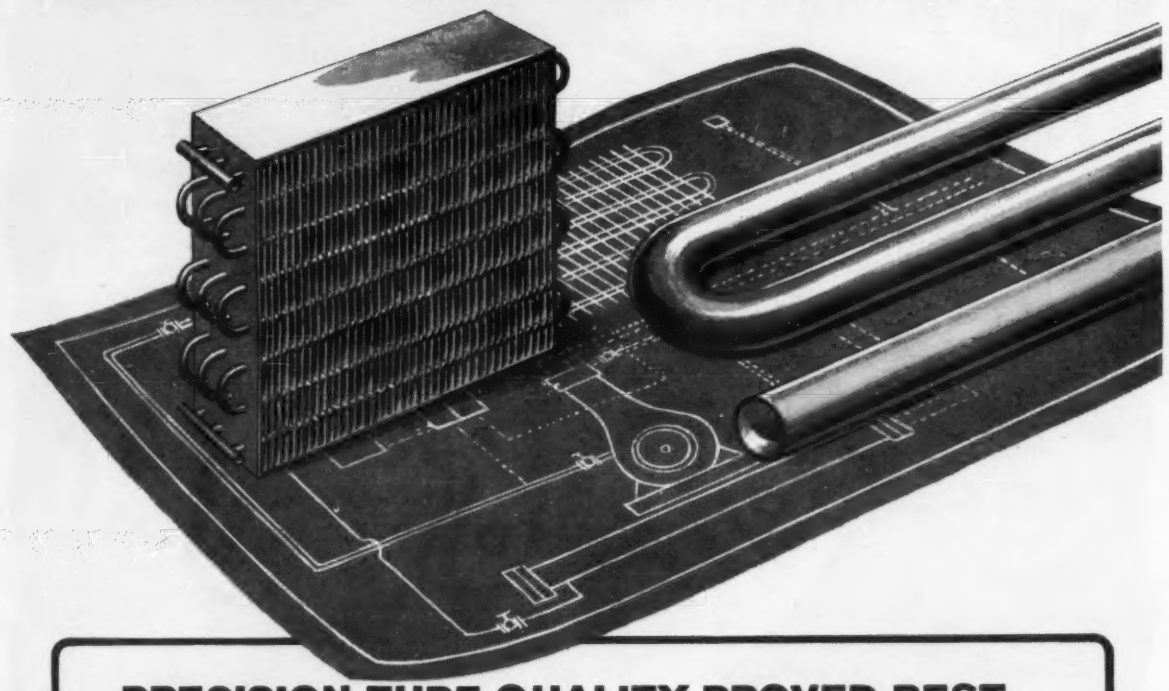
Other officers: D. M. Brousson, Vancouver, B. C., Can., first vice president; Robert H. Swart, Grand Rapids, Mich., treasurer; George Primich, Gary, Ind., secretary.

It was announced that trustees from even numbered regions will serve one year; directors from odd-numbered regions will serve two years—"to establish continuity on the board of trustees."

The new directors: Region 1—George B. Sprick, New Haven, Conn.; Region 2—Fred C. Baumbach, Rochester, N. Y.; Region 3—Eugene Brown, Charlotte, N. C.; Region 4—C. Blaine Lytle, Detroit; Region 5—Joe M. David, Sullivan, Ill.; Region 6—William H. Brauer, St. Louis; Region 7—Vince G. Shields, Jr., Birmingham, Ala.; Region 8—L. E. Minns, Houston; Region 9—Malcolm B. Nicholson, Denver; Region 10—Emery Lillard, Walnut Creek, Calif.; Region 11—B. H. Browning, Hamilton, Ont., Can.; Region 12—Donald M. Keefer, Portland, Ore.

NHAW's Spring convention will be held in Montreal, May 20-23, Bull announced.

WHERE *Precision-eering* PAID OFF IN INCREASED PRODUCTION AND PROFITS



PRECISION TUBE QUALITY PROVED BEST... REDUCED REJECTS

A leading manufacturer of air conditioning and refrigeration units was confronted with the usual and costly problems of temper deficiencies in ordinary tubing. Peak production was not possible because of wrinkles at the bend, unevenness in length after forming, and—worst of all—*leakers* after assembly.

But these problems were solved! After testing several makes of tubing for temper, straightness, roundness and accuracy, Precision Tubing was found to be the only one that rated "Excellent" in all categories.

Throughout the industry more manufacturers are proving, on their production lines, the extra value of Precision Tubing. If you need ⅜" x .016" wall, ⅝" x .022" wall, ⅞" x .025" wall, or any special size for hydraulic or mechanical expansion, depend on Precision to improve your quality and reduce your costs. Regular Mill Prices, too!

Also available in size .010" O.D. to 1.125" O.D. in copper, brass, aluminum, nickel and Ni Span C, accurately drawn seamless capillary tubing in straight lengths or coils. *Write for Precision Tube catalog to*

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PRECISION TUBE COMPANY

NORTH WALES, PA. • PRECISION-EERS OF SMALL TUBING

Wholesaler's 'Junior Trade Show' Declared a Success; More Planned

BILLINGS, Mont. — A two-day sales and service clinic staged this fall by Temperature Supply Co. here for the air conditioning, refrigeration, and heating trade in the area was so successful that the supplies wholesaler plans to hold future "Showaramas" every other year.

"We describe this meeting as a 'Junior Trade Show' with exhibits and factory personnel present, the same as at the big national exhibitions or 'All Industry' shows," it was pointed out by Norm Sulenes, president of the firm.

"Thirty-two manufacturers, some of whom had one, two, and even three men present, were exhibitors. Most of the equipment exhibited was of the type which was either a working model or the cut-away type."

Continuous educational movies were shown in the firm's "Little Theater Off Exhibit Square."

The show, which was held Friday, Sept. 23, from 1 to 9 p.m. and on Saturday, Sept. 24, from 9 a.m. to 4 p.m., had a total dealer attendance of 145. Dealers from North and South Dakota, Montana, and Wyoming were present. It was held in the firm's Billings warehouse, newly-constructed last year and measuring 50 ft by 50 ft.

The clinic was publicized well in advance, using reminder stickers on invoices and letters, Sulenes noted.

TYPICAL reminder stickers used on invoices.

"To assure the success of this venture," he added, "all personnel of Temperature Supply Co., both in Billings and Great Falls, were instructed to publicize the show during every contact with our customers, be it personal out in the territory, at our own showroom and city desk and over the telephone long distance."

Temperature Supply bore the expense of two smorgasbords, one Friday evening and one Saturday noon, as well as a social hour on Friday afternoon. Door prizes were offered as an added incentive to attend.

Dec. 19-20

Cal Poly Session Designed to Draw Future Engineers

SAN LUIS OBISPO, Calif.—A unique preview approach to whet engineering career interest of young science students is being tried here by California State Polytechnic college.

The two-day preview was made possible by a substantial financial gift from the Western Air Conditioning Industries Association of Los Angeles, which is interested in attracting high caliber young men into the industry.

Forty high school juniors and seniors from all over California, carefully selected with the help of science and math teachers and counsellors, will be all-expense guests of the school for two days, Dec. 19 and 20, for a foretaste of engineering education on the college level.

Though only 40 could be chosen, Engineering Dean Harold P. Hayes said high school science students were so eager for the experience, though it meant sacrifice of two Christmas vacation holidays, that the college received 320 applications by deadline time.

Cal Poly for years was the only college in the U.S. to offer an engineering major in air conditioning, it was noted.

'White Rooms' Among Topics at Plant Maintenance, Engineering Conference

CHICAGO—"Insuring Cleanliness In the 'White Room,'" "The Pro's and Con's of Outside Contracting," and "Keeping Contamination Out of Air and Water" are among topics programmed for the 1961 Plant Maintenance & Engineering Conference.

The conference is held annually during the first three days of the Plant Maintenance & Engineering Show. The show is scheduled to run from Jan. 23 through Jan. 26 at the International Amphitheatre here. The exhibit area will cover six acres and more than 375 companies will participate.

Morning sessions of the conference will take place at the Amphitheatre and evening sessions at the Palmer House.

Conference topics this year are balanced to include both the managerial and technical aspects of maintenance, it was stated. Special "problem sessions" have been arranged for various types of plants.

The discussions on white rooms and outside contracting are scheduled for Tuesday evening, Jan. 24, as two of several concurrent sessions. That on "Keeping Contamination Out of Air and Water" will be held Wednesday evening.

Jury Charges Negligence In Windsor Blast

WINDSOR, Ont., Can.—Negligence on the part of the gas company, a heating contractor, and the store owners was the main cause of a gas explosion in a Windsor store last Oct. 25 that killed 10 persons and injured 80, a coroner's jury has decided.

The jury recommended tighter regulations to govern the installation and inspection of heating units.

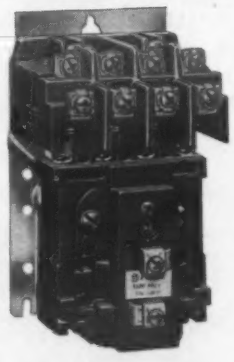
At the time of the explosion, Charles Ingram of Jessup Plumbing Ltd. was installing a new gas line into the building where a coal furnace was being converted to gas.

The gas company charged that he violated the city heating code and the Ontario provincial department of energy's gas code by uncoupling a pipe supplying gas to a meter in the basement. Ingram was restricted under the code to piping from the meter to the furnace, Gavin Martin, operations manager of the Union Gas Co., Ltd., said.

Ingram told the jury that regulations permit an authorized agent of the gas company to work on the supply side of the meter.

He said he considered himself authorized because he had been hired by the company to do the conversion.

Reduce Relay Inventories



ALLEN-BRADLEY TYPE BR RELAY CONTACTS ARE CONVERTIBLE IN SECONDS

Because the contacts of the Type BR relay can be changed—in seconds—from N.O. to N.C. (or vice versa) a single four-pole relay can serve five different service requirements. Consequently, you can reduce your inventory of relays. And—there is no better relay on the market. In tests these new Type BR relays have *proved* they are good for many millions of operations. Please write for complete details today!

BULLETIN 700 TYPE BR RELAYS are available with up to six switching poles—plus two auxiliary poles—resulting in an eight-pole relay.

One or two auxiliary poles can be easily added to the base of each Type BR relay—out in the field—without removing the relay from its mounting.

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.
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ALLEN-BRADLEY
Member of NEMA
Quality Motor Control

give winter a warm welcome in your community

with

PEERLESS PERFECTEMP FURNACES

Offer Lifetime Guarantee, Get A Warm Welcome From Home Owners!

Furnace performance determines customer satisfaction, and that's why Peerless quality puts you out front of competition. Peerless PerfecTemp performance brings all-dimension comfort all through the home. Balanced design plus extra heavy-duty heat exchanger give Peerless furnaces the heart for hard work. That's why Peerless can offer a factory written lifetime guarantee on Versat-all models. Peerless manufactures a complete line of furnaces for gas, oil and coal from 65,000 to 1,000,000 BTU, and also manufactures the Clima Pump, the all new, all electric heat pump. Write today for all the facts regarding Peerless . . . there's profit in it for you!

PEERLESS CORPORATION
1853 LUDLOW AVENUE
INDIANAPOLIS 7, INDIANA
Manufacturers of quality Furnaces, Central Air Conditioning and Electric Clima-Pumps

NCRSA New Orleans Meeting--

(Continued from Page 1)

and are fighting, in some cases successfully, for no holdbacks on contracts by finance companies and banks.

Distributors also asserted that they are finding less interest both among distributors and food store operators for equipment leases.

In response to Schwegmann's complaint, some distributors suggested that they make it a point to explain to customers why they charge contract interest rather than the simple interest the supermarket operator gets from his food wholesaler.

Such reasons include the nature of the contract and of the business relationship between the supermarket operator and the equipment distributor. They contend that even the food wholesaler could not offer this type of conditional sales contract at the lower rates he does for food stocks.

NCRSA jubilantly marked this convention, staged in the newly-opened Royal Orleans hotel in the heart of the famous French Quarter, as its most successful. More than 180 persons attended the annual banquet—larest in the history of the association.

New memberships were announced as they were received throughout the sessions with the record breaking 63rd membership for the year proffered just as the convention closed. Membership Chairman Cawthon reported that the association's membership now stood at a new high—329.

Suggestions on what to do to sell successfully in a changing market were offered by many speakers. (More detailed convention reports will appear in later issues of the NEWS).

What One Firm Did To Strengthen Position

Ray Winther, retiring president, reported that his firm has done several things this past year to strengthen its position. He cited the following:

1. Establish a new air conditioning and industrial department which did about a $100,000 volume in its first year.
2. Clean house in the sales department by weeding out men who barely make quota and replacing them with new trainees.
3. Separated and streamlined the installation and service departments.
4. Set up a parts department control. Most rewarding: recovering 211 lbs of R-22 and 377 lbs of R-12 from "empty" cylinders in five months. Savings from this operation $375.
5. Worked out a realistic financing program.

James Scatena of Scatena York Co. pointed out the advantages of diversification through selling refrigeration equipment to the non-food customer.

Such diversification keeps up morale in the sales department by keeping sales of small items coming in between big store jobs. It provides less turnover in service and erection department by keeping these men busy the year around. It spreads financing to other fields and cuts down over-all risk. And it leaves less openings for small specialty, but financially unsound, concerns from getting into the field.

Most important, Scatena figured that it costs the California distributor $8.05 for every labor hour he has to sell. Thus he must consider how best to use these scarce hours he has available.

"Now it takes about 50 man hours to install $6,000 worth of air conditioning," he declared. "It took 750 man hours to install $60,000 worth of market equipment.

"In other words, it took about 15 times as many man hours to install a sale with a 1.25 markup. But the sale was only 10 times the volume of one that carried a 1.5 markup.

"These figures are signficant when you realize that the same salesman can do both jobs."

In the same vein, Donald Denny of Modern Market Fixtures, Dayton, Ohio, asserted that "most of our good salesmen today—salesmen who go all out in promoting a location, securing a prospect for the location, and getting an equipment order, are lapsing into the order taker class when it comes to the accessory line.

"I mean the pricing equipment, lettering for departments, rubber greens for meat cases, pans, racks, etc.

"In this changing market, we must get out of our . . . ideas of selling only large complete markets and sell the profit story on new ideas, and new departments such as pie bakers and ice vendors."

How To Sell To Voluntaries, Co-ops

Philip W. Herman of Minneapolis told how his company sold to voluntaries and co-op store groups.

"Because each group is a little different," he said, "we sit down with management and discuss what they want and how best to achieve the results that we are both looking for. We have taken a page from the wholesaler's book and charge on the basis of what services are used."

His construction program, Herman said, is limited to those groups which have a good sound store program including direct and responsible supervision and which are financially responsible.

He advised against any one group accounting for more than 20% of the distributor's total volume in any one year to avoid against the hazards of personnel changes in the group, mergers, and the "pot shots" of competitors.

Urges Tight Control Of Inventory

During an afternoon-long clinic on the service department, Foster Van Cleve of Friedrich Refrigerator Co., Fort Worth, Texas, urged tight executive control over inventory.

"I think it's foolish to tie up several thousand dollars in service inventory that might not be needed for several weeks or months," he asserted. "Keep on hand what you need for day-to-day operation. Order the service equipment you need for your big jobs when you need it.

"If one will watch his buying, keep a close watch on inventory control, properly route and supervise service personnel, watch billings and collections, then there is no earthly reason why a service department can't earn its way and show a profit.

"Markup on service costs should average from 30 to 35%.

Now you can handle 90% of your replacement control calls with just 24 . . .

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Imagine! Only 24 basic controls and installation packages and you're in business to handle 9 out of every 10 control calls. Installation is fast and simple . . . you've everything you need to do the job on the spot. And you know it will be done right the first time. You service more jobs per day, boost your weekly profits. Be sure to see your wholesaler about new A30 Replacements today!

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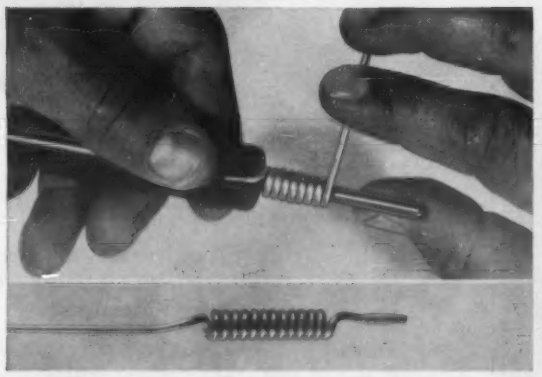
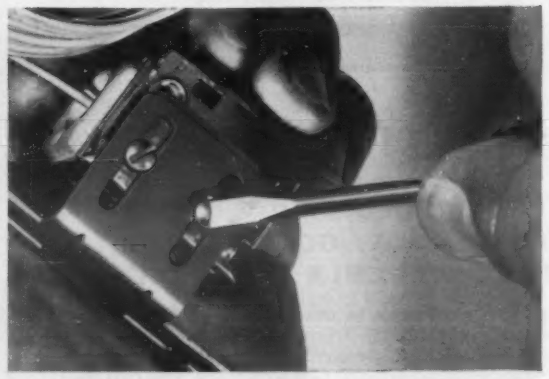
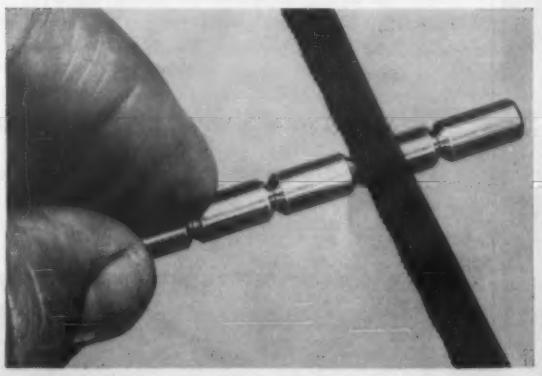


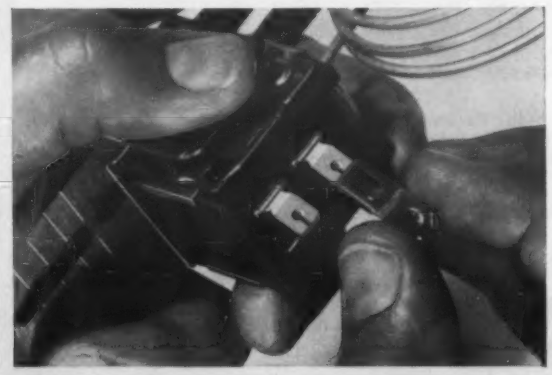
SHAPE the capillary tube (if necessary) with Ranco's new capillary forming tool available from your wholesaler.



ADJUST the mounting bracket on the new A30 Replacement for height and mounting hole spacings.



SAW dial shaft extension (unattached to control) to adapt it to any desired length and insert it in the Ranco A30 Replacement.



ADD terminal adapter clips (if necessary) and the A30 Replacement is ready for fast installation.

Profit on service should average out 10%."

C. V. Hill, chairman of the board of C. V. Hill & Co., Inc., brought the distributors up to date on the zero degree frozen food code recommended by the Association of Food and Drug Officials of the United States and scheduled to go into effect in Massachusetts next Feb. 1.

4 Things Mfrs. Can Do To Assure Workable Code

Hill pointed out that while the Commercial Refrigerator Manufacturers Association did not feel additional legislation is necessary in this field, there are four things that the manufacturer can do to insure a workable code. These are:

1. Only release frozen food cases for sale having the discharge air in the vicinity of -15° and return air to be approximately -5° to compensate for normal drafts, light rays, and usage.

2. Improve performance by further trying to lower temperatures, reduce and shorten defrost periods, and continue to strive to manufacture trouble free equipment without increasing costs to the retailer.

3. Improve literature and manuals to the food store operator so that he will receive the maximum benefit from the equipment he has purchased.

4. Realize, when developing equipment that new fixtures such as vertical displays, should not be marketed unless they can maintain a 0° product temperature.

New officers elected to head NCRSA for the coming year were Dudley Cawthon, Miami, president; Donald Denny, Dayton, first vice president; E. B. Ward, South Bend, Ind., second vice president; H. E. Humphreys, Concord, N. H., third vice president; and George Lucas, E. Hartford, Conn., treasurer.

New directors elected for three-year terms were Jack Burton of Nashville, Tenn., Philip Herman of Minneapolis, and L. C. Warren, Jr., of Atlanta.

Prevention of Basin Freezing

(1) Steam Coil Immersion Heating

$$\text{Pipe Length} = \frac{\text{Heat Loss (Btuh)}}{10{,}000} \times \text{Pipe Factor}$$

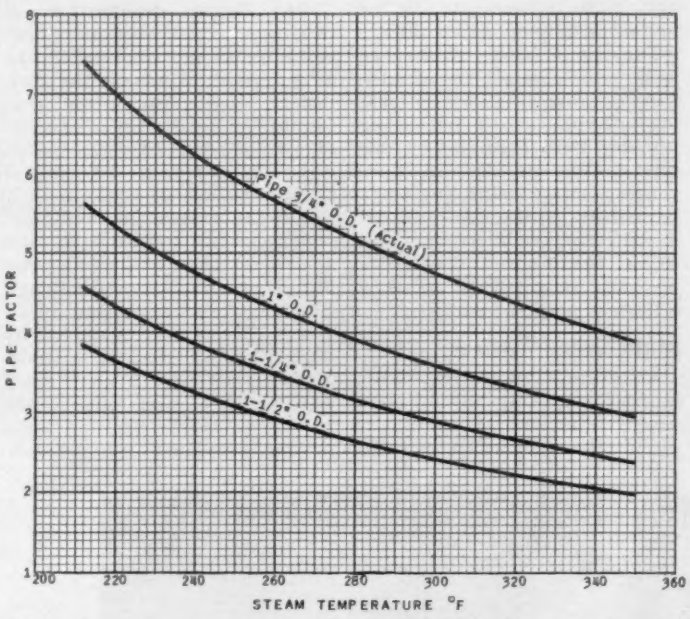


FIG. 1—Pipe factors for rating of steam coil immersion heaters (based on 40° water temperature).

By Don Cousins and Ray Miller, The Marley Co.

The need for year-round tower operation is growing, and with it grows the problem of freezing hazards during routine shutdown periods in cold weather.

Although there are several methods of combatting this problem, i.e., locating the tower inside, using indoor storage tanks, etc., we must recognize that, in the case of larger installations, it is usually most practical and economical to propose the typical roof installation in which the tower cold water basin is exposed and dormant overnight and over-the-weekend.

Some method of preventing freeze-up of the basin during shutdown should be engineered to avoid frequent drainage of the system. The problem can be divided into three basic steps:

(1) Determination of the amount of basin heat loss.

(2) The selection and rating of a heating method.

(3) Physical application and orientation.

Steam coil immersion heating, is a practical and widely-used method of applying heat to larger cold water basins. This method is particularly attractive when low pressure steam is available at all times. First cost is low and operation costs per unit heated are very reasonable.

Cold Water Basin Heat Loss

The following table is based upon maintaining a cold water temperature of 40°F. Calculation of basin side area should be based on the assumption that water depth is equal to maximum basin height. Water surface and basin bottom area may be assumed equal to overall tower nominal plan area. The values shown are for steel basins, and are satisfactory, though slightly conservative, for wood basins.

Ambient Air Dry Bulb Temperature °F	Heat Loss From Water Surface Btuh/sq ft Qws	Heat Loss From Basin Sides and Bottom Btuh/sq ft Qb
−10	126.5	40
−5	116.0	36
0	105.5	32
+5	94.5	28
+10	83.5	24
+15	73.0	20
+20	62.5	16
+25	52.9	12
+30	45.0	8

Total Heat Loss (Btuh) = Water Area × Qws + (Side + Bottom Area) × Qb.

1. Calculate cold water basin heat loss, Btuh.

Water Surface Area = 16 x 13 = 208 sq ft.

Basin Bottom Area = 16 x 13 = 208 sq ft.
Basin Side Area = 1 x (2x16 + 2x13) = 58 sq ft.

266 sq ft.

From Heat Loss Table at +50°.
Water Surface Loss = 94.5 Btuh/sq ft.
Basin Sides & Bottom Loss = 28.0 Btuh/sq ft.
Gross Heat Loss = 208 x 94.5 + 266 x 28.0
= 19,656 + 7,448
= 27,104 Btuh.

2. Select pipe factor

From pipe factor table, the pipe factor for 1 in. O.D. pipe and 212° steam is 5.6.

3. Calculate required pipe length.

$$\text{Pipe Length} = \frac{27{,}104}{10{,}000} \times 5.6 = 15.2 \text{ ft.}$$

* * *

Selection and Design

The available steam temperature and the desired size of piping or tubing must be known. If copper tubing is employed, Type K (heavy wall) tubing is recommended for steam pressures under 150 psi, provided building codes are not violated.

The pipe factor curves in Fig. 1 provide a means of selecting a "Pipe Factor" which, in turn, offers a simple method of calculating required pipe length for various sizes of pipe. It must be observed that, although these pipe factors may be used for materials other than copper, the actual pipe outside diameter, not the nominal size, must be used with the curves. To determine the required pipe length, proceed as follows:

(1) Calculate cold water basin heat loss, Btuh.

(2) Locate point of intersection between design steam temperature and pipe factor curve for desired pipe size (actual outside diameter). Read pipe factor from vertical scale.

(3) Calculate required pipe length using this formula:

$$\text{Pipe Length (feet)} = \frac{\text{Basin Heat Loss}}{10{,}000} \times \text{Pipe Factor}$$

Example:

Size a cold water basin heater for a tower with basin dimensions 16 x 13 x 1 ft deep. Ambient air dry bulb temperature is 5° minimum. Available steam supply will be 212°. Copper tubing of 1 in. outside diameter is to be used for coil material. Tower is to be supported on grillage so heat loss from basin bottom must be included.

(Continued on next page)

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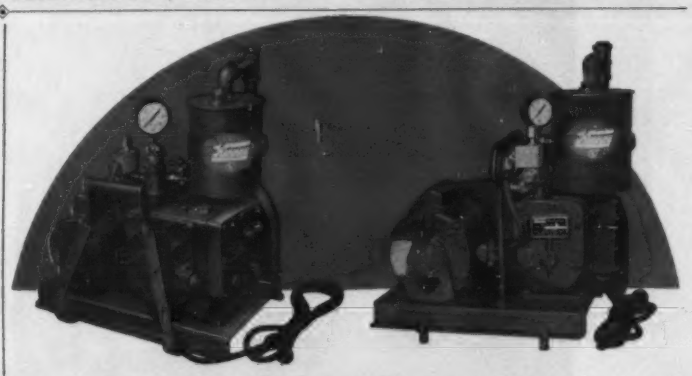

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Basin Freezing--

(Continued from Page 29, Col. 5)

Application and Orientation

The example above indicates that 15.2 ft of 1-in. O.D. pipe supplied with 212° steam will provide adequate heat to handle the specified conditions. Practically speaking, it is not possible to arrange 15.2 ft of pipe in a 13 x 16-ft basin such that good heat distribution will be realized [It is desirable to use at least 1-in. O.D. pipe or tubing to allow free flow of the steam condensate into the return line.]

In order to prevent freezing in all parts of the cold water basin it is necessary that the pipe be arranged and positioned such that the heat will reach all areas, and it is most essential that a portion be located near the sump. Layout of the line in other portions of the tower is not too critical. Thus it can be seen that any such arrangement will introduce considerable reserve capacity because of the additional piping required. This reserve capacity is not harmful nor does it increase substantially the operating costs of the system.

Single-Celled Towers

As a general guide, the line should be placed around the basin perimeter so that it is from two to three feet in from the basin wall on louvered sides and three to four feet in from the basin wall on the cased sides. A portion of the line must pass near the sump(s). The line may be brought in from any side of the tower. Here are some typical diagrams based on the above example:

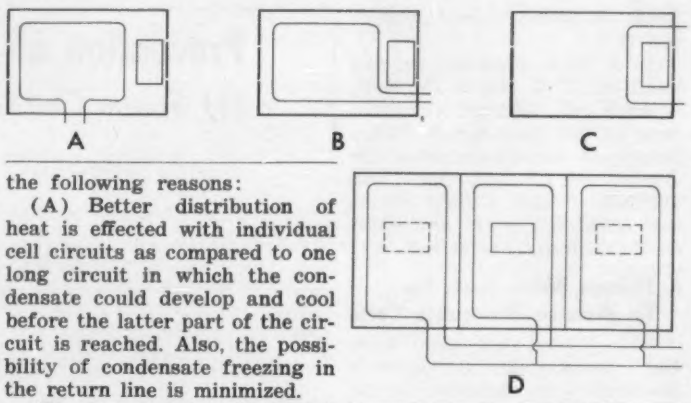
Diagram A shows the steam line entering and leaving the cased endwall side of the tower.

Diagram B shows the steam line entering and leaving the louvered side of the tower. In both cases the line travels the tower perimeter and borders the sump, a very desirable arrangement for installations where the dry bulb temperature be expected to prevail below 20°.

Diagram C shows an arrangement which would be satisfactory in those areas where freezing seldom occurs but where the dry bulb temperature may dip as low as 20°. A much shorter run of steam line (more in accord with the "design" length that would be calculated using the above pipe factor method) is required but must still pass near the sump.

Multi-Celled Towers

Diagram D shows the recommended layout for a multi-celled tower. It is always desirable to circuit the cells individually for the following reasons:



(A) Better distribution of heat is effected with individual cell circuits as compared to one long circuit in which the condensate could develop and cool before the latter part of the circuit is reached. Also, the possibility of condensate freezing in the return line is minimized.

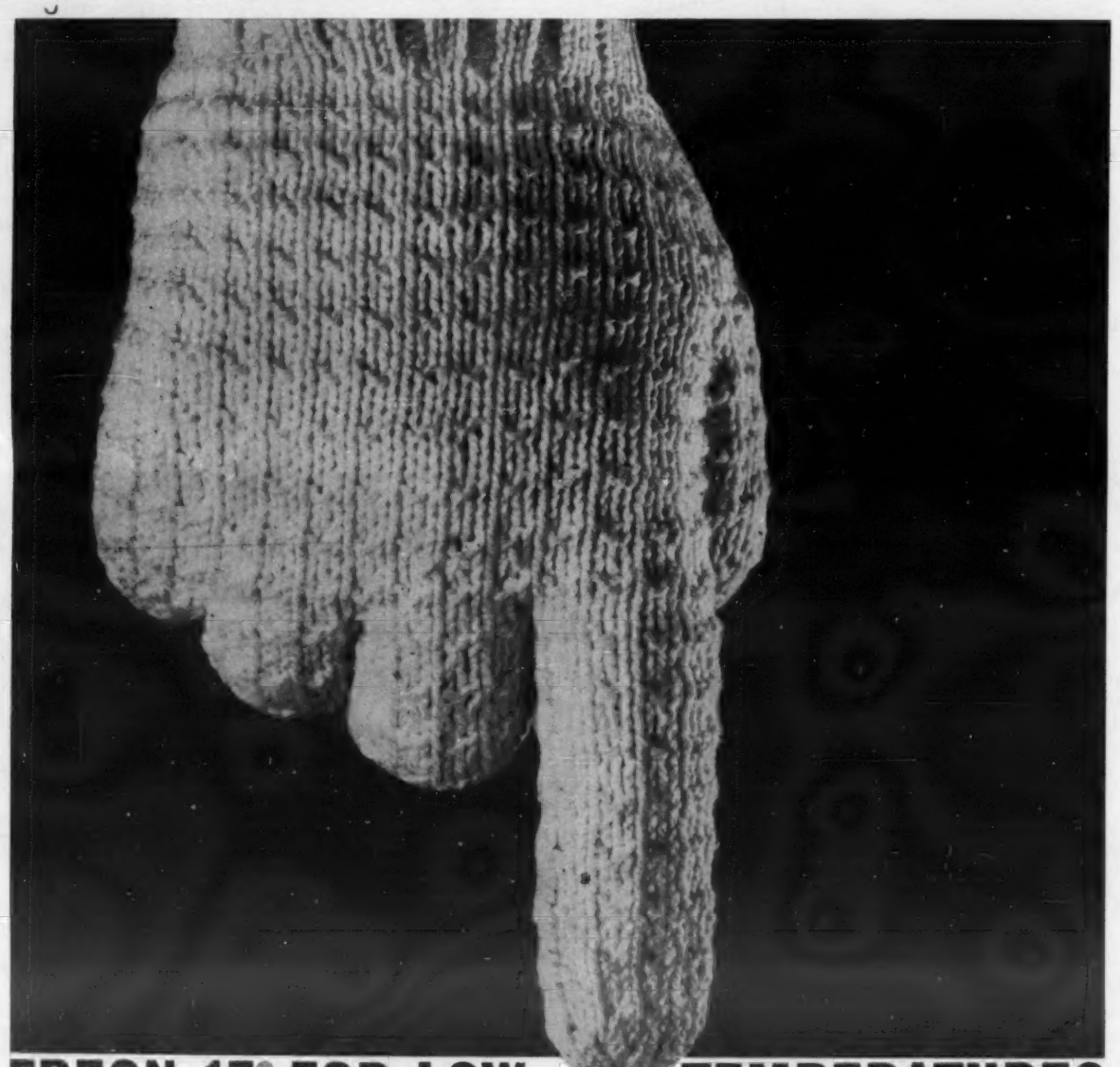
(B) It is easier to "build in" the necessary gradient in each circuit so that any condensate will drain properly and will not be trapped in the piping.

(C) When cold water basin partitions are used, it is desirable to be able to shut down any cell(s) and drain the basin(s) while the remaining cell(s) continue to operate with winter protection.

External Piping and Sump Protection

External piping and exposed depressed sumps must be protected from freezing during idle periods. One method provides for the use of a steam pipe or electric resistance strip heater either of which is fastened to the water line throughout its exposed length. The entire assembly then is wrapped heavily with insulation.

(To Be Continued)



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Current Literature

New Pricing Service

MANHATTAN BEACH, Calif. —A new pricing service, "Contractor Resale," has been developed for the refrigeration and air conditioning contractor.

The book features illustrations, sizes, specifications, and prices suitable for use on the service truck. The book was designed to fill specific needs of mechanics who must have this information on the job, it was stated.

Complete details are available from the publisher, R. A. C. Price Reporter Co., 1809 Manhattan Beach Blvd., Manhattan Beach, Calif.

Hagan Water Filter

PITTSBURGH — A detailed description of its No. 9 water filter is contained in a new bulletin issued by Calgon Co., a division of Hagan Chemicals & Controls, Inc., Hagan Center, Pittsburgh 30, Pa.

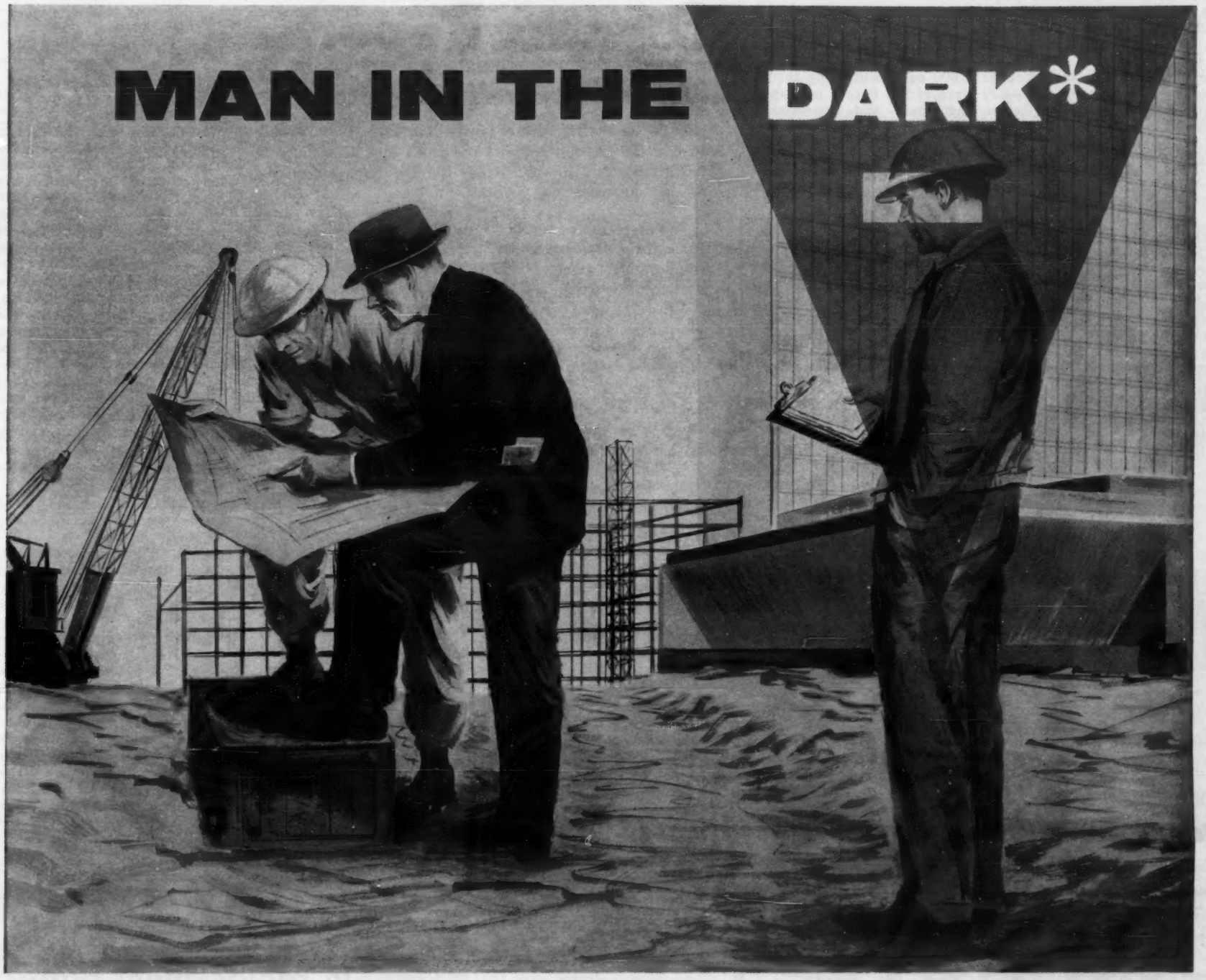
The new filter makes water cleaner by removing suspended iron oxide, sand, silt, and scale particles, the bulletin states. The filter contains a special replacement stone cartridge that will handle flows up to 10 gpm, pressures to 120 psi, and temperatures to 100 °F.

Airtemp Equipment

DAYTON — Chrysler Corp.'s Airtemp Div. has released a new 8-page product folder on its Applied Machinery & Systems equipment.

This folder lists Chrysler's 1961 line of centrifugal water chillers, air handling equipment, central station air conditioning units, packaged liquid chillers, radial compressors, condensing units, cooling and heating units, and fan coil equipment.

Copies of the folder, LL-349-10, may be obtained by writing to the Advertising Dept. Chrysler Airtemp, Box 1037, Dayton 1, Ohio.



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Roy Follett Begins Addition

PHILLIPSBURG, N. J.—The Roy Follett Corp., maker of ice storage bins and accessory equipment for automatic ice machines, has begun construction of an addition to its present plant.

Don S. Follett, president, announced that the additional 5,000 sq ft will bring the total area of the Follett manufacturing plant and warehouse to 23,000 sq ft.

The construction schedule calls for completion of the project by Jan. 1.

Owners Report - -

107-Store Supermarket Chain's Service Records (1)

In this unprecedented study-in-depth of a 107-store supermarket chain, the NEWS presents a look at commercial refrigeration and air conditioning through the eyes of a user of the equipment.

* * *

What are the advantages, to the chain, of doing its own engineering, layout, and equipment selection?

What factors affect the decision to go water or air cooled? Open-type or hermetic compressor? Refrigerant-12 or 22?

How large a share of construction cost goes to refrigeration and air conditioning?

How many service calls a year are made on 107 stores?

What fixtures and components require most frequent attention?

What effect has the age of a store on its service requirements?

How does the cost of refrigeration service compare to the cost of other service requirements?

* * *

These questions indicate and imply the range of specific information which is presented in this series.

Food chains are known for their reluctance to speak for publication, even anonymously. The chain which cooperated in this NEWS study indicates, "It is our hope that the ideas and data revealed in these articles will encourage other chains to enter the discussion.

"We consider it necessary that all commercial refrigeration information published does not originate with equipment manufacturers."

By Frank J. Versagi

Thirty-seven per cent of the construction cost of a typical supermarket goes for refrigeration and air conditioning.

Fifty to 58% of a chain's total maintenance budget is spent maintaining and servicing refrigeration; another 13-16% is devoted to air conditioning.

Figures such as these justify the care and surveillance which food chains devote to selection and installation of cooling equipment.

Probably no other chain exercises tighter control over its operations in this respect than does the 107-store division of a national chain studied for these articles.

Chain Has Confidence In Conclusions Drawn from Records

Well kept and studiously scrutinized files and records have given the chain so much specific information on its operations that the company feels confident in imposing its own design considerations over those of commercial refrigeration supplier. The company purchases the low sides, the fixtures, from manufacturers, buys its condensing units and miscellaneous equipment from local wholesalers, and leaves the installing contractor only the copper to supply. The company's own field supervisor oversees every installation, staying on the job from start to finish.

One of his prime tasks: to assure the pulling of a good vacuum, "We aim for two microns, for five hours. This has completely licked the moisture problem for us."

Another: to insure the proper installation of fuses. "All newer stores are fused with time-delay fuses rated 25% over full load running amps. This, of course, is much less than a line fuse rating, and it protects against single-phasing. A 5-hp compressor would take a 45-amp normal fuse to protect against starting load. We use a 25-amp time-delay fuse."

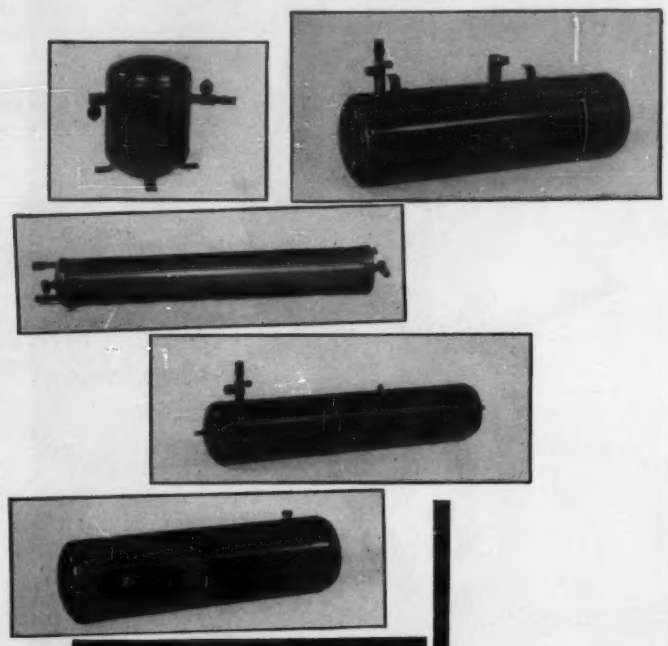
Some other design and equipment selection conclusions of the company: A preference for Refrigerant-12 over 22; favoritism toward open type, rather than hermetic compressors; a decision to go to air-cooled equipment wherever feasible; multiplexing—as many as seven cases on one machine—is a good thing; use of one defrost a day on frozen food and ice cream fixtures; a reduction of head pressure on low temperature units to 105 psi from the conventional 120 psi.

Chain Has Done Own Engineering Since 1952

"Since 1952, we have done our own engineering," states the engineering director. "Further, we are a licensed refrigeration contractor. This fact, alone, assures us of realistic bids when we let out a job.

Over-all, we find that doing things this way costs us less money than if we follow a manufacturer's design and installation practice. Consistently, we use less copper and much less horsepower to equip our stores than before," the director states.

It is significant that one of the best known representatives of a commercial refrigeration manufacturer, a man who preaches complete and detailed store planning by the manufacturer for the market operators, learned much of his technique at this



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chain. "We are happy to see our planning methods being so widely accepted and circulated," muses the engineer.

The chain's thinking on store design is best exemplified by discussing specifics.

The company's preference for open type, rather than hermetic compressors, for example. Of the 107 stores in the chain, only 10 have hermetic, actually semi-hermetic, compressors; even some of the newest stores make use of open-type equipment.

"We have a couple of practical reasons for this preference," explains the chief engineer. "And it's hard to say which reason is more important.

"First, we are convinced that open-type compressors have a much longer life than hermetic units. We don't think it is coincidental that the oldest units we have in operation are open type.

"Secondly, a progressive supermarket chain is constantly expanding and remodeling. A hermetic compressor, moved off its original installation, is inevitably too big or too small for the next job we'd like to put it on. With the open type, you change a pulley size, adjust the motor, and you get a good working range of capacities which make it much more universally applicable."

According to the chain's chief engineer, the primary advantage of open-type units over hermetics is a closer balance between high and low sides, with "more satisfactory operating conditions.

"Store remodeling often requires the removal of a section of low side, and with open-type units, compressor displacement can be changed to meet the new load conditions.

"Also, in many instances existing high sides, displacement are for high temperature applications and therefore they can be converted to standard or low temperature applications. But in the case of hermetics, the units would have to be changed to meet the new load requirements."

To the objection that open-type compressors require more service, especially with belt replacements and seals, the chain offers well kept service records which shows that such objections simply are not valid.

Chain Will Switch to Air-Cooled Equipment

In spite of this preference for open-type compressors, the company will be going hermetic in future stores. The reason is another, and overriding, preference —the decision to go air cooled.

Actually there is only one air-cooled store in the chain so far, and it has not gone through a long enough run to enable the company to determine how its motorized dampers, thermostatically controlled exhaust fans, and air-cooled condensers will behave at extreme ambients in summer and winter.

But the company feels sure the air-cooled installation will succeed. "Realistically, we expect the total operating costs will be about the same as on a water-cooled job," offers the chief engineer. "in spite of the larger horsepower requirements which are inherent in air-cooled installations.

"Our figures show that the installation cost of an air-cooled installation is lower than a water-cooled one," he illustrated. "The calculations show that the cost of fans, motorized louvers and controls is about the same as the cost of a water tower, but significant savings are realized since no piping manifolds, valves, and water treatment costs are involved.

"Our thought is to go air cooled whenever we can from now on," amplified the engineering director. "Obviously, if we have to go into a basement machine room or suck dirty air off a narrow alley, we'll use water."

When the chain goes water cooled, it uses a water tower on refrigeration or natural draft on air conditioning. "On those occasions when a water tower goes down for a couple of weeks, and we go onto city water, you should hear the complaints all down the line on the high water bill," chuckles the chief engineer.

To keep such shutdowns minimized, the company has tower preventive maintenance regularly performed. In 1959, for example, the service records show that 192 calls were made in the 107 stores for PM on towers. These PM calls accounted for almost 4% of the total calls made during the year.

Likes To Keep Towers, Evaporative Condensers On the Inside

The chain likes to keep towers and evaporative condensers inside. "They are out of the weather so they last longer," offers the chief engineer.

"Equally important," chimes in the refrigeration service supervisor, "my men can't plead the weather, absence of a ladder or any similar excuse for not getting to the tower and performing the PM call when it is assigned to them."

Another advantage of placing the cooling tower in the machine room is that outside air may be brought in, run through the room, and exhausted, thus maintaining a good ambient in the room. "One immediate advantage of this," says the chief engineer, "is that we can size heater elements without worrying about their losing effectiveness in winter.

Over-all tower sizes have fallen in the 40-ton class with air movement between 9,500 and 10,000 cfm. When towers are located on the roof, ventilation must be provided in the machine room. "This would be an additional cost in equipment and operation."

Multiplexing Used Extensively for Fixtures

Switching to the subject of multiplexing, the chief engineer states that they will put six or seven normal temperature cases on one machine. They have gone as far as 7½ hp on such multiplex, although the more normal installation is about 5 hp. Only three frozen food cases are placed on a single condensing unit, and only two ice cream fixtures.

There is no multiplexing of coolers.

"My records show no difference at all between the service frequency of multiplexed and non-multiplexed systems," insists the supervisor. "The fear of what would happen if a whole line went down is unrealistic. First, it almost never happens, especially if you have good preventive maintenance.

"Secondly, frozen foods in the lower layers have held their temperatures overnight without refrigeration. In one case, even after a fire in the store, where a burning roof had fallen on the case, only the upper layers were spoiled."

What about the company's standardization on Refrigerant-12?

"We have settled on R-12 for all remote installations because of the several distinct advantages of this refrigerant over 22," insists the chief engineer. Among the properties he listed as favoring 12: miscibility with oil at all temperatures; the lower suction velocity required with 12 for oil return; increased compressor performance due to low pressure drop; lower operating discharge pressure and temperature; lower cost of refrigerant; reduced oil breakdown.

"On package air conditioning units, R-12 is acceptable because the low sides are above the high sides and adequate oil return can be maintained by gravity."

"With us, it is almost a mania that we keep our condensing pressures down on low temperature systems," says the chain. "Thus, we arbitrarily operate at 105 psi head instead of the conventional 120 psi."

Stores with cooling towers, where water saving is no problem, operate low temperature units at condensing temperatures of 92°. "From this control we get lower heat of compression, lower oil temperatures, increased compressor capacity, and lower kilowatt input. All standard temperature cases operate off a cooling tower are run at 102° condensing temperature."

"We want the oil kept as cool as possible; we want the oil to return to the compressor (oil separators are a nuisance!); we want to reduce the heat of compression. We know that the answer to these objections is that they can be overcome, to some degree, by alterations in system design. Truthfully, we have proven to our own satisfaction that the necessary changes are not worth the bother."

(To Be Continued)

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From the Manufacturers

Service Bulletins

In this department, the NEWS presents significant items from information published in the Service and Technical bulletins of manufacturers.

Recommendations for the application, installation and use of Copelametic compressors in single-stage low-temperature systems (5° to -40°F) with Refrigerant-12 or 22.

The compressor selection, suction temperature and application must be such that the temperature of the discharge line measured within 1 in. to 6 in. of the discharge service valve does not exceed the following limits—Refrigerant-12, 230°F, Refrigerant-22, 250°. Under these conditions the estimated average temperature at the discharge port (valve retainer on valve plate will be approximately 310° for R-12 or 350° for R-22.

The compressor displacement, pressure limiting devices, and quantity of cooling air or water, must be selected to prevent the motor temperature from exceeding the limits stated below:

(A) 210° when protected by inherent protectors affected by line current and motor temperature.

(B) 190° when protected by motor starters. For longer motor life operating temperature of 170° to 190° are highly recommended.

The temperature of the motor should be determined by the resistance method and should be determined when the compressor is tested in the highest ambient in which it is expected to operate, and at 90% of rated voltage.

In order to prevent the discharge and motor temperatures from exceeding recommended limits it is very desirable and in some instances absolutely necessary to insulate the suction lines and return the suction gas to the compressor at a lower than normal temperature. This is particularly important with suction-cooled compressors when Refrigerant-22 is used. (Approximately 30° superheat suggested).

The line sizes must be so selected to assure velocity of the refrigerant to return the oil to the compressor. The formation or make up of the lines must be so designed that oil trapping will not exist. The highest velocity possible without encountering excessive drop is recommended. At least 750 fpm velocity should be maintained in horizontal suction and discharge lines. At least 1,500 fpm velocity should be maintained in vertical suction and discharge lines with upward flow.

To avoid oxidation and scaling of tubing and fittings during the soldering operation an inert gas such as oil pumped dry nitrogen or dry carbon dioxide (with the pressure reduced to a minimum) should be allowed to flow through the tubing to displace the oxygen. After all joints have been soldered the entire system should be blown out with dry nitrogen or dry carbon dioxide to remove any free foreign particles, such as scale, dust, or solder.

WARNING — High Pressure Compressed Gases **Should Not** Be Used without Suitable Pressure Regulating And Relief Devices.

One or more high-grade filter-driers of generous size must be installed in the liquid line preferably in the cold zone. The desiccant used must be capable of removing moisture to a low end point and be capable of removing a reasonable quantity of acid. It is most important that the filter-drier be equipped with an excellent filter to prevent circulation of carbon, foreign particles, or else an additional filter must be provided.

A good grade moisture indicator should be installed either in the liquid or suction line as recommended by the manufacturer of the device.

After complete assembly all systems should be thoroughly evacuated with a high grade vacuum pump and dehydrated to assure that no air or moisture remains in the system. The triple evacuation method should be used breaking the vacuum each time with dry refrigerant through a dehydrator.

The compressor motor **must not be operated** while the high vacuum pump is in operation otherwise motor damage is very likely to occur.

The system should be charged with clean, dry refrigerant only through a dehydrator. Other substances such as liquid dehydrants or alcohol **must not be used.** The use of these might result in compressor or motor damage which would be considered misuse not covered by the Copeland warranty.

Copeland approved overload protective devices **must be used to protect the motor.** Failure to use Copeland tested and approved devices may result in motor damage which will be considered misuse adversely affecting the warranty.

An adequate supply of oil must be maintained in the crankcase at all times to insure continuous lubrication. **If the refrigerant velocity in the system is so low that rapid return of the oil is not assured an adequate oil separator must be used.**

The normal oil level should be maintained at or slightly above the center of the sight glass. An excessive amount of refrigerant or oil must not be allowed in the system as it probably will result in excessive liquid slugging and damages to the compressor valves, pistons, or cylinders.

An oil pressure safety switch may be installed on any compressor equipped with an oil pump to stop the compressor in case of an oil pump failure or dangerously low oil level. The use of an oil pressure safety switch is recommended on any system where an abnormally low oil level might occasionally occur and on systems which do not have reasonably close inspection and maintenance.

The Copeland warranty covers **defective workmanship and/or materials only** and does not cover compressor damage due to misuse, mis-application, or improper maintenance. **Therefore, it is to your advantage to follow these recommendations closely to prevent loss of warranty.** All in-warranty compressors returned to Copeland for repair or replacement are very carefully inspected by trained personnel and compressors showing evidence of failure due to reasons other than defective workmanship and/or material **will not be replaced no charge regardless of the date of manufacture or sale.**

Copeland Refrigeration Corporation

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

WHAT . . WHEN . . WHERE

— A Guide to Coming Events of Interest

Industrial Heating Equipment Association, Inc.
Jan. 23-24, Dearborn Inn, Dearborn, Mich.

National Association of Home Builders
Jan. 29-Feb. 2, Exposition Center, Chicago.

American Society of Heating, Refrigerating & Air-Conditioning Engineers, Inc.
Feb. 13-16, Chicago.

National Association of Refrigerated Warehouses, Inc. and Refrigeration Research Foundation
March 27-30, Mark Hopkins hotel, San Francisco.

Gas Appliance Manufacturers Association
April 5-7, Boca Raton hotel, Boca Raton, Fla.

National Association of Electrical Distributors
April 29-May 3, Detroit.

Industrial Heating Equipment Association, Inc.
May 21-24, The Homestead, Hot Springs, Va.

The Institute of Boiler & Radiator Manufacturers
Week of June 12, Seaview Country Club, Absecon, N. J.

American Society of Heating, Refrigerating & Air-Conditioning Engineers, Inc.
June 26-28, Denver.

HOW SERVICE GARAGES, GASOLINE SERVICE STATIONS REFRIGERATION REPAIRMEN

CAN MAKE BIG MONEY on a 4¢ INVESTMENT

Vornado is increasing its nation-wide service franchises.

There's big money in servicing Vornado Auto Air Conditioners, as an authorized Vornado Warranty and Service Station. All you need to invest is the price of a postage stamp. A letter to the Vornado Auto Air Conditioner Corporation will start you on the road to BIGGER PROFITS AND A BETTER INCOME.

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- You will be paid by the factory for all service on warranted Vornado Auto Air Conditioners.
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- You will be a member of a nation-wide service team. This gives you more prestige in your community and more profits for your business.

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A Division of Automatic Radio Mfg., Inc. World Famous for Over 40 Years

SPECIAL DELIVERY BY ROCKET?

No. we aren't using the new ballistic missiles yet, but maybe some day. In the meantime, Harry Alter gives you the fastest possible service. Your orders are handled with *careful* speed. Complete inventories and streamlined methods assure truly snappy service.

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G-E Extends Cooling Line--

(Continued from Page 1, Col. 3)

that is open to package units.

Ramsdell also outlined to distributors the price reductions —ranging from 3 to 13% on air conditioning and heating products—which are going into effect on many models in the existing product line.

The "something new" in consumer incentives, as described by Joe Heffernan, manager of advertising and sales promotion, will be the offer of a G-E portable TV set with every installation of a G-E central air conditioning system in 1961. The Lawn-lite and Stereo promotions, which proved successful this year, will also be continued in 1961, Heffernan said.

Another type of promotion is aimed at the commercial market. In this, the prospective buyer is offered a G-E window-type room air conditioner for use in his home if he air conditions his place of business with a G-E central air conditioning system. "This will give the commercial buyer a 'taste' of home cooling and could pave the way for a later 'whole house' installation," it was explained.

High Hopes for Food Chain Promotion

Another promotion is one for which high hopes are held, based on a test made in Houston, Heffernan related. In this plan the local air conditioning dealer or distributor gets together with a large local food chain (in Houston it was the 13-store A&P organization) and offers a G-E central air conditioner, complete to installation, as the grand prize in a consumer contest run by the chain.

To tie the package together, the food chain stands the expense of running regular semi-weekly full page (or spread) grocery advertisements—preferably in color—publicizing the contest, with the dealer or distributor supplying 4-color mats without charge. A G-E alarm clock is offered if the customer indicates on the entry blank a request for a free survey and estimate of the customer's requirements for a whole-house air conditioning system.

In the Houston try-out early in November, the promotion developed "hundreds of leads resulting in many sales" of central air conditioners, and the food chain said that its records indicated a 15% sales increase had been realized.

Incentives for dealers in the coming year will include a prize-trip contest which will take the dealers to "parts of the world more distant than that reached on previous trips."

Also new in the area of dealer rewards and recognition will be the formation of the "Monogram Dealer Club" which will recognize the top-performing dealers with special rings, plaques, insignia, and other recognition awards.

The New Products

Complete details on the new products will not be released until a later date, but from information made available it was learned that the 8-ton and 10-ton units will have hermetic R-22 4-cylinder compressors running at 3,450 rpm with expansion valve refrigerant flow control. The condensing unit section dimensions (crated) are length, 77½ in.; width, 32⅞ in.; and height, 56½ in.

The new 2½-ton and 3½-ton upflow-downflow air handlers have three-row (13 fins-per-in.) copper coils, direct-drive 5-speed centrifugal blowers, and semi-permanent high velocity filters.

The ultraviolet "Air Wall" irradiation system is readily installed in a 3¼-in. by 12-in. stackhead, and may be wired into a regular household electrical circuit. Air passing through the ductwork is repeatedly exposed to the rays of high frequency ultraviolet energy just before it enters the room, and substantial percentages of air-borne bacteria will be killed and many household odors oxidized, according to claims made for the system.

G-E's 2½ and 3-ton upflow-downflow air handler exhibited by Bob Tribble, manager-project and builder sales.

INTRODUCING new ultraviolet "Air Wall" irradiation system is Joe Heffernan, manager-advertising and sales planning.

Irradiation lamp is furnished pre-mounted with control enclosure, pre-wired with ballast, starter, and interlock switch. Assembly is designed for use only with G-E "Air Wall" register face, which shields the bulb itself from direct observation by persons in the room. Interlock switch actuated by damper allows lamp to be turned on or off at will, and interlock also cuts off lamp if register face is removed.

Through October sales of G-E conventional type central comfort cooling systems were up 14%, and sales of the "Weathertron" heat pump line were up 20% over comparable 1959 figures, Ramsdell told the distributors.

In heating equipment, the marketing manager said that thus far this year industrywide sales of new gas and oil-fired furnaces were running at about 90% of the rate of last year's sales, and that G-E sales of such equipment were about in line with the industry rate. Ramsdell said that it was evident that more attention must be given in sales effort to sales of heating equipment for replacement purposes, since about one out of every three furnaces sold now are going for replacement purposes, and this percentage is growing all of the time.

Economic Forecast

Ramsdell cited studies by General Electric economists that point to improved conditions in 1961. The year 1960 was marked by an economic downturn, which the economists see as mild and which they feel has about run its course because:

1. The drop-off in inventory building had resulted in inventories in many lines being about depleted by the end of the third quarter.
2. Housing starts have begun to show increases.
3. Credit is being eased.
4. Government spending is very likely to increase, and while consumer spending has not been showing any great improvement, it seems probable that it will show some substantial improvement before the second half of 1961.

Based on best available current estimates, Ramsdell sees residential construction increasing by at least 7% next year, with air conditioning installations in new home construction continuing at an accelerated rate as it has for the past few years.

Ramsdell, Heffernan, and W. G. Mulcock, manager, sales, made a number of points as keys to improved sales in 1961. Among them:

(ABOVE) Air Wall register showing ultraviolet lamp in operation. (Below) Ultraviolet apparatus in Air Wall register stockhead with register removed.

Three basic MUST'S

Thorough knowledge of the product lines and where each product fits in the market picture.

Training in application engineering through schools held for this purpose.

Learning how to sell with credit.

For the distributor, a strong recommendation was made for the development of a plan of action involving:

1. A plan of action, based on knowledge of territory including such factors as survey of dealer possibilities against the requirements of the market, a study of economic trends particularly with reference to real estate, and a study of how competition goes to market.
2. Training sessions for dealers, emphasizing the establishment of their good name, plus a tie-in with a top brand name, together with education on selling, inventory control, and general business management of a dealership. Special books and bulletins have been prepared on these various items.
3. Realization that the wholesale salesman is a key factor in the success of any distributorship, with special attention needed in handling, compensating, and rating of such salesmen.

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Why Does
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REFRIGERATION, INC.
use Revcor
"BLASTAIRE"
BLOWER WHEELS?

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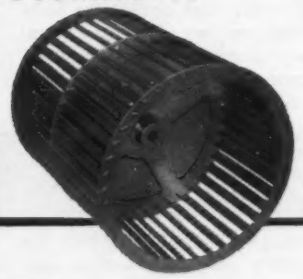

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Blastaire Blower Wheels use less space and meet the high performance and quality standards demanded by Amana!

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800 to 1 hp favorites for quiet operation, low maintenance and long-life service . . .

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ELECTRIC MOTORS
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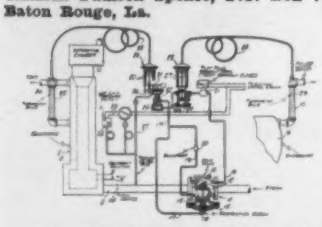
Milwaukee 1, Wisconsin, U.S.A.

PATENTS

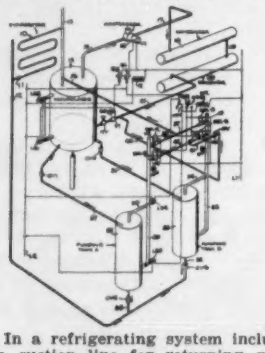
Week of Sept. 13

2,952,136. REFRIGERATION MACHINE. Paulsen Spence, P.O. Box 77, Baton Rouge, La.



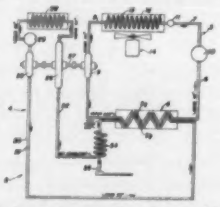
2. In an absorption refrigeration system, a generator, a cold zone, a conduit for conveying heating fluid to said generator, a main valve in said conduit for controlling the flow of heating fluid to said generator, a fluid pressure actuated means for actuating said main valve, a pipe connected to the high pressure side of said main valve for conducting pressure fluid to said fluid pressure actuated means for actuating said main valve, a pair of temperature pilot valves in series in said pipe for controlling the flow of pressure fluid therethrough each of said pilot valves having pilot valve control means. . . .

2,952,137. LOW PRESSURE REFRIGERATING SYSTEMS. John E. Watkins, 307 Lake St., Maywood, Ill.



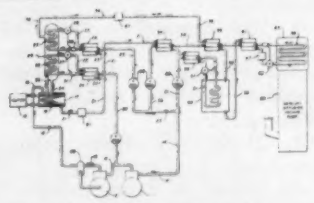
1. In a refrigerating system including a suction line for returning gaseous refrigerant from an evaporator to a compressor and a feed line for liquid refrigerant, an accumulator tank connected to both of said lines operative to collect liquid refrigerant entrained with the gaseous refrigerant in the suction line and to flash off gas and reduce the pressure of liquid refrigerant received from the feed line. . . .

2,952,138. DUAL CYCLE HEAT POWERED AIRCONDITIONING SYSTEM. Jacob B. Russell, 2135 Ridgeway, Arlington, and Francis M. Partridge, 1240 Arrowhead Dr., Irving, Texas.



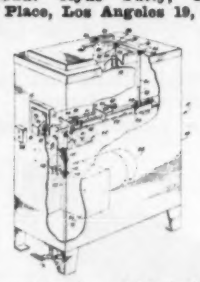
1. A heat powered refrigeration system comprising: a closed cooling cycle having a liquid phase portion and a vapor phase portion and including a cooling unit and a compressor, a closed power cycle having a liquid phase portion and a vapor phase portion and including a fluid pump and a turbine motor, a counterflow heat exchanger common to both closed cycles, and means to utilize heat from the cooling cycle to at least partially actuate the power cycle. . . .

2,952,139. REFRIGERATION SYSTEM ESPECIALLY FOR VERY LOW TEMPERATURE. Patrick B. Kennedy, Berkeley, and Hugh R. Smith, Jr., Oakland, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission.



1. In a binary refrigeration system, a closed circuit comprising first and second compressors connected in series; a fractionating tower connected in series with and downstream from said compressors; first, second, and third evaporators connected in parallel to the liquid outlet of said fractionating tower, the outlet of said first evaporator being connected between said first and second compressors and the outlets of said second and third evaporators being connected to the inlet of said first compressor; a condenser connected to the vapor outlet of said fractionating tower. . . .

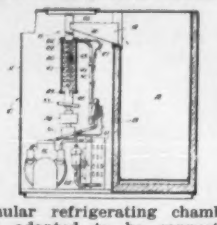
2,952,140. CONTROL FOR MACHINES DISPENSING FROZEN PRODUCTS. Clyde Patty, 4562 St. Charles Place, Los Angeles 19, Calif.



1. A construction which includes: a freezing cylinder having ends; a discharge valve located at one of said ends of said cylinder, said discharge valve having a handle extending therefrom; a feed tank located above said cylinder; a feed pipe leading from bottom of said feed tank into the other end of said cylinder; a valve body movably mounted so as to normally fit within said feed pipe in order to prevent the contents of said feed tank from moving into said cylinder; a tube extending through said valve body from the interior of said feed pipe to the top of said feed tank. . . .

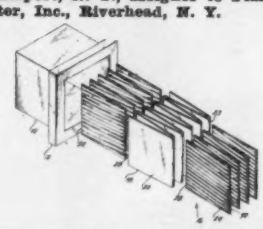
2,952,141. REFRIGERATION APPARATUS. Marcus Nelson, Albert Lee, and Benjamin K. Roberts, Lyle, Minn., assignors, by mesne assignments, to King-Seeley Corp., Ann Arbor, Mich.

1. Refrigerating apparatus comprising a freeze chamber having a generally cylindrical exterior sidewall, a sleeve surrounding but spaced from the sidewall to provide therebetween



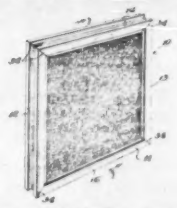
an annular refrigerating chamber, a conduit adapted to be connected at one end to a source of refrigerant and having a portion extending through the refrigerating chamber in the form of a spiral, said portion sealingly engaging the adjacent surfaces of the sidewall and sleeve to have heat transfer relationship with said sidewall and form a spiral passage between the convolutions of the spiral portion. . . .

2,952,333. FILTERS. Louis Bush, Jamesport, N. Y., assignor to Flanders Filter, Inc., Riverhead, N. Y.



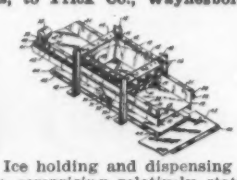
1. A filter for a gaseous stream flowing in a particular direction comprising a plurality of layers of filtering media, each of said layers being integrally hinged to an adjacent layer and being formed from an accordion-pleated strip of filtering material, and corrugated separators disposed between said layers of filtering material and extending for a greater portion of the length and width thereof, said separators having corrugations extending substantially laterally with respect to the integrally hinged connection of the layers of filtering media and being adapted to be disposed in the general direction of the gaseous flow. . . .

2,952,342. DUST FILTER HAVING SPACED FILTER ELEMENTS AND FRAME FOR HOLDING SAME. George Schnittker, 900 E. Roosevelt Rd., Lombard, Ill.



A frame particularly adapted to hold dust filters or the like, said frame comprising connected sections each of which has a pair of spaced channels, each of said spaced channels comprising inner and outer flanges with the proximate inside flanges of said channels connected by a web, said connected sections being formed from a flat strip which is bent along the lines extending longitudinally thereof to define the aforesaid spaced channels and connecting web, cut out portions provided in said flat strip and spaced at intervals therealong. . . .

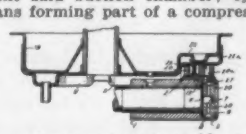
2,952,391. ICE HOLDER AND DISPENSER. Milton W. Garland, Waynesboro, Pa., assignor, by mesne assignments, to Frick Co., Waynesboro, Pa.



3. Ice holding and dispensing mechanism comprising relatively stationary upright side wall structure diverging slightly from top to bottom to prevent ice contained between such side wall structure from bridging and preventing it from moving downwardly by gravity, a bottom in cooperative relation beneath and movable relative to said side wall structure, said movable bottom having an opening for the discharge of ice therethrough, and cutter means extending upwardly in said opening to dislodge and cause the discharge of ice through said opening, and means for producing simultaneous motion of said cutter and bottom with respect to said upright side wall structure. . . .

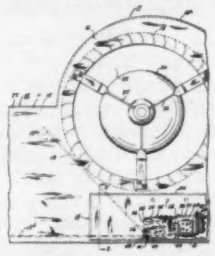
2,952,400. MOTOR-COMPRESSOR. Rudolf Hintze, Neunhain (Taunus), Germany.

1. In a motor-compressor in combination, wall means forming part of a carrier which carries a motor and a compressor, said wall means defining a suction chamber and a pressure chamber separate from and located adjacent said suction chamber; cylinder means forming part of a compressor of



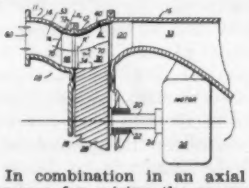
the motor-compressor, said cylinder means being closed at one end and having a side surface adjacent said one end thereof directed toward but spaced from said wall means; a piston reciprocable in said cylinder means to perform suction and pressure strokes....

2,952,402. AIR DELIVERY APPARATUS. Thompson Morrison, Shaker Heights, and Richard A. Carr, Cleveland, Ohio, assignors to Morrison Products, Inc., Cleveland, Ohio.



1. In air delivery apparatus, means providing an air flow passage and including blower means in communication with said passage and operable to produce a flow of air therethrough, a driving motor connected with said blower means, a damper in said passage and movable to open and restrictive positions relative to said passage for controlling the air flow therethrough, biasing means connected with said damper and tending to move the same to said restrictive position. . . .

2,952,403. ELASTIC FLUID MACHINE FOR INCREASING THE PRESSURE OF A FLUID. Edward A. Stalker, 406 N. Farragut St., Bay City, Mich.

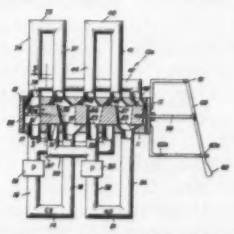


1. In combination in an axial flow compressor for raising the pressure of an elastic fluid, a case means defining an inlet duct, a rotor case, and an exit duct, a rotor hub mounted in said rotor case for rotation about an axis and defining a flow channel with said rotor case, said channel registering with said inlet duct and said exit duct to conduct a flow of fluid. . . .

2,952,404. BLOWER WHEEL ASSEMBLY. Harold A. Austin, Kalamazoo, Mich., assignor to Brundage Co., Kalamazoo, Mich.

1. In a centrifugal blower wheel construction, the combination comprising: a pair of spaced and coaxial annular rims, a circular center structure of less diameter than the outside diameter of said spaced rims, a series of blades having radially inner and radially outer edges. . . .

2,952,446. HEATING AND COOLING ALTERNATOR VALVE. Melvin L. Holland, 13677 Carfax Ave., Bellflower, Calif.



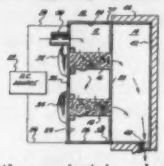
A heating and cooling alternator comprising a hollow cylindrical manifold having an end plate at each end to enclose the interior thereof, a hot fluid supply unit connected at opposite ends to said manifold, a cold fluid supply unit connected at opposite ends to said manifold, a service load unit connected at opposite ends to said manifold, a heat dissipator and collector connected at opposite ends to said manifold. . . .

DESIGNS

188,236. ADJUSTABLE LOUVERED PANEL. Adam D. Goettl, Phoenix, Ariz., assignor to McGraw-Edison Co., Elgin, Ill.

Week of Sept. 20

2,952,980. THERMOELECTRIC DEVICE. William A. Douglas, South Pasadena, Calif., assignor to Mira Corp., Los Angeles, Calif.



8. A thermoelectric element comprising a thermoelectric material prepared to have a porosity to allow the passage of a heat transfer fluid therethrough between a pair of junctions formed thereon whereby the material exhibits a non-linear temperature gradient between the pair of junctions formed thereon. . . .

2,952,981. REGENERATIVE AIR CYCLE REFRIGERATION. James L. Bartlett, Jr., Los Angeles, Calif., assignor to The Garrett Corp., Los Angeles, Calif.

1. An expansion cooling system for cooling an enclosure comprising a source of pressurized gas, a vortex tube for cooling said gas having an inlet, a hot tube and a cold outlet, means connecting said source to the inlet of said vortex tube, expansion means for further cooling said gas, means connecting the cold outlet of

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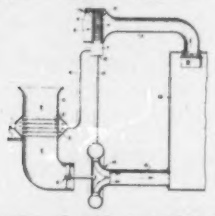
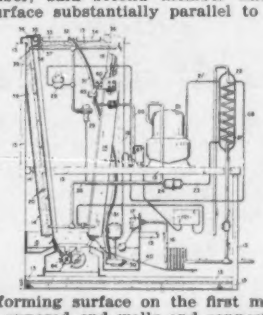
the vortex tube to the inlet of said expansion means, means connecting



the outlet of said expansion means to said enclosure, an outlet for said enclosure, and means for passing the gas exhausting through said enclosure outlet into heat exchange relation with the hot tube of the vortex tube. . . .

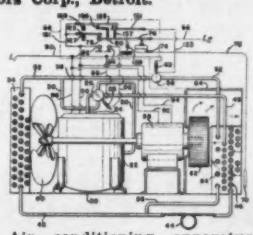
2,952,988. ICE MAKING APPARATUS. David Earle MacLeod, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.

1. An ice making machine comprising an ice forming member including a first member having an ice accumulating surface, and opposed side walls having portions bent back to form flanges, a second member formed of material having thermally conductive properties differing from the first member, said second member having a surface substantially parallel to the



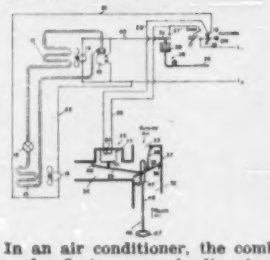
ice forming surface on the first member, opposed end walls and connecting flanges for securing the second member to the flanges of the first member; a refrigeration system including, an evaporator coil secured to the surface of the first member opposite the ice accumulating surface; means for supplying water to the refrigerated ice forming member to form an accumulation of ice thereon. . . .

2,952,989. AIR CONDITIONER WITH CONTROLLED REHEAT. Ira L. Gould, Hamilton, Edward A. Van Schaik, Dayton, and Harvey R. Tuck, Trotwood, Ohio, assignors to General Motors Corp., Detroit.



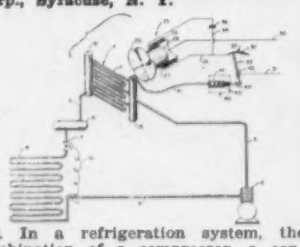
1. Air conditioning apparatus including a motor-compressor unit having a refrigerant inlet and a refrigerant outlet, a condenser having a refrigerant inlet and a refrigerant outlet and having a restriction to refrigerant flow, an evaporator having a refrigerant inlet and outlet for cooling a stream of air, a reheat coil in the stream of air following the evaporator having a refrigerant inlet and a refrigerant outlet, a valve having only fully open and fully closed positions and having an inlet and an outlet, conduit means connecting the outlet of said motor-compressor unit to the inlet of said condenser and to the inlet of said valve. . . .

2,952,990. AIR CONDITIONER CONTROL. William L. McGrath, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



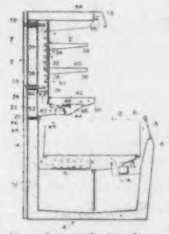
1. In an air conditioner, the combination of a first passage leading to an enclosure, a second passage leading from said enclosure, a third passage communicating with an area external to said enclosure, a damper mechanism for selectively placing said first and second passages in communication and placing said first and third passages in communication, an electrical circuit including a switch having winter and summer positions, first means in said circuit to open and to close the circuit, said means being responsive to the temperature of said enclosure and operatively associated with said switch....

2,952,991. HIGH SIDE PRESSURE CONTROL FOR REFRIGERATION SYSTEMS. John N. St. Pierre, North Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



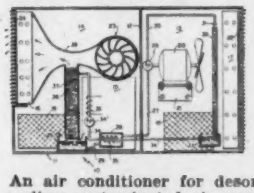
2. In a refrigeration system, the combination of a compressor, a condenser, expansion means, and an evaporator connected in a circuit, said condenser including a heat exchange coil with a path for refrigerant therethrough; fan means for passing air over said heat exchange coil for condensing refrigerant vapor passing therethrough; an induction motor connected to said fan means, a variable inductance connected in series with the induction motor for varying the speed of the fan means; pressure responsive means; means connecting the pressure responsive means with the heat exchange coil to impose refrigerant pressure upon the pressure responsive means. . . .

2,952,992. REFRIGERATED SHELF. Donald A. Voorhies, Morrisville, Pa., assignor to C. V. Hill & Co., Trenton, N. J.



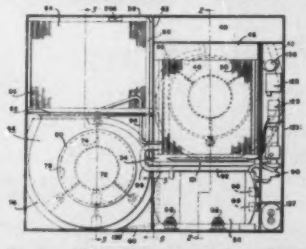
1. A unit adapted to be applied to a display case or the like to increase the useful capacity thereof, said unit comprising an insulated rear wall, a perforated duct member spaced from said rear wall and cooperating therewith to form a vertically extending air duct, shelves carried by said unit and extending horizontally in front of said duct member, means for refrigerating and circulating air through said air duct and into contact with articles supported on said shelves including an air inlet beneath the lowermost of said shelves and communicating with said air duct, and attaching means secured to said rear wall of the unit and extending downward below the same into position to be secured to a display case or the like....

2,952,993. AIR CONDITIONER. Cyrus M. Bosworth, Jr., Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. An air conditioner for desorbing and cooling contaminated air comprising a refrigeration system including an evaporator and condenser, an odor absorbing medium, means for storing the odor absorbing medium, a contact member, means for bringing said odor absorbing medium from said storing means into contact with said contact member, means for passing said contaminated air through said contact member and said evaporator, said odor absorbing medium absorbing odors from said air by contact therewith at said contact member. . . .

2,952,994. AIR CONDITIONER ELEMENT ARRANGEMENT. Kenneth R. Partington, Dayton, and Harvey C. Black, Jr., Waynesville, Ohio, assignors to General Motors Corp., Detroit.



1. An ultra thin compact rectangular air conditioner positioned between two extensive closely spaced upright planes including an upright partition wall extending between said spaced planes, a thin evaporator positioned generally parallel to said planes between said planes on the first side of said partition wall, a first centrifugal motor blower located on the first side of said partition wall between one of said planes and said evaporator and having its axis of rotation substantially perpendicular to said planes and having its impeller partially surrounding its motor, duct means extending on the first side of said partition wall between said planes connecting said blower with the adjacent face of said thin evaporator. . . .

(To Be Continued)

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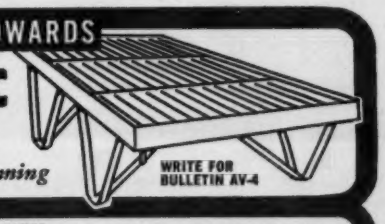
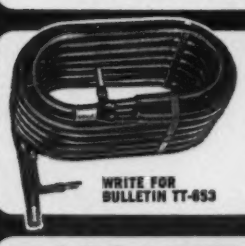


WRITE FOR BULLETIN AV-4



WRITE FOR BULLETIN TT-653

WATER COOLED COAXIAL CONDENSERS

Domestic and sea water models

Reduce costs 40% . . . Reduce condenser water 35% . . . Reduce refrigerant charge . . . Stabilize capillary performance . . . Compact shapes.

MOTORIZED VALVES

For chilled water cooling systems and for heating systems . . . 100% positive shut-off . . . Compact . . . Low cost . . . Low Voltage . . . No current draw when open.

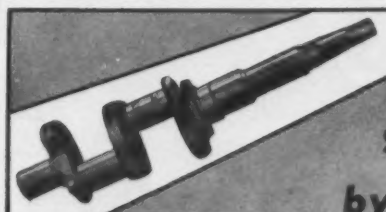
WRITE FOR BULLETIN MV-1

EDWARDS ENGINEERING CORP.

938-14 Alexander Ave., Pompton Plains, N. J.

TEmple 5-2808

"One of the nation's largest manufacturers of Residential and Commercial Boilers, Baseboard and Steel-Fin Radiation, Motorized Valves, Air and Water-Cooled Refrigerant Condensers."



Specify SHAFTS by MODERN

Uniform in quality, precision machined to closest tolerances, Shafts by Modern now power compressors for the nation's leading lines of refrigeration and air conditioning units.

Call, write or send blueprints now for precision shafts made to your exact specifications.

MODERN MACHINE WORKS, INC.

Manufacturers of Crankshafts, Eccentric Shafts, and Straight Shafts SINCE 1924

5354 S. KIRKWOOD AVENUE CUDAHY, WISCONSIN

F. L. Riggin, Sr.

F. L. Riggin, Jr.

Mueller Brass--

(Continued from Page 1, Col. 1)

climaxes a career which began when he was 13 and started to work in the company's shops during school vacation. Finishing school he joined the company in 1931 working in a number of positions before being named general sales manager in 1941 and vice president-sales and assistant to the president in 1948. He was elected executive vice president of the firm in 1951.

He has been long active in community and national affairs.

Fred L. Riggin, Sr., takes his new post after having already served Mueller Brass for over 43 years, 24 years of them as president. One of the leading figures in the brass and copper industry, he has taken a prominent part in local, national, and industry affairs.

Bid Procedure--

(Continued from Page 1, Col. 4)

commented:

"We are not in a position to approve these. What those operating the new bidding council (Construction Bidding Practices Advisory Council of Southern California) do is pretty largely up to them."

Co-counsel represent the new Construction Bidding Practices Advisory Council of Southern California.

Attorney Henry B. Ely is identified with the Subcontractor Bidding Practices Advisory Council.

Attorney George M. Cox represents the General Contractor Bidding Practices Advisory Council.

Each of these advisory councils appointed five members and five alternates to the ten-man Executive Committee.

Text of the agreement to establish the conference will be published in a later issue of the NEWS.

The Executive Committee had its first meeting Oct. 31 and selected a general contractor as chairman, a sub-contractor as vice chairman, a sub-contractor as secretary, and a general contractor as treasurer.

Names of these officers are: Chairman Jack Bernard, vice chairman Win Rawlins, secretary Stanley Brekhus, and treasurer C. B. Holder.

One of the five Executive Committee members appointed by the subcontractor council is J. Frank Park of Western Air & Refrigeration. His alternate is Herbert P. Schuch of Vernon Refrigeration. Schuch is president of Refrigeration & Air Conditioning Contractors Association of Southern California, it was pointed out.

Air Conditioning, Refrigeration Business Rise In Los Angeles Area Attributed to CRAC Effort

LOS ANGELES—Stimulation of growth in the realm of increased employment and business contracts in the air conditioning and refrigeration industry throughout Los Angeles and Orange counties has recently been credited to the promotion program of the Certified Refrigeration & Air Conditioning Foundation.

An analysis of this growth pattern was made public in a special report by L. P. Jacobsen, chairman of the CRAC Foundation.

In his report, Jacobsen noted that under the program more than $900,000 in added gross income has been generated for the contractors in the area during the first eight months of 1960. The added income does not include profits for refrigeration and air conditioning equipment whether on service work or new construction.

Union Members Benefit

Meanwhile, through the promotion program, union members employed in the refrigeration and air conditioning industry benefited by nearly a half of a million dollars in new and additional wages during the same period, it was stated.

In compiling the figures, Jacobsen said, an allowance of 5% was made to adjust for the normal growth in the industry's business activity.

The efforts of the foundation also resulted in an increase of more than 15% in the total number of hours worked by union members in 1960 over the year previously, he pointed out.

"It is apparent that the increase of 1959-60 over the winter of 1958-59 is even greater, consisting of almost 18%. In the past the increase in union membership has been approximately 5%, but 1960 shows an increase of approximately 12%.

"The rise in the union's work forces can be credited to the stepped up advertising and promotion activity. For example, Gene Ballard, business manager of the union, points out that in 1952 only 400 members were working, as compared with over 1,100 now," Jacobsen noted.

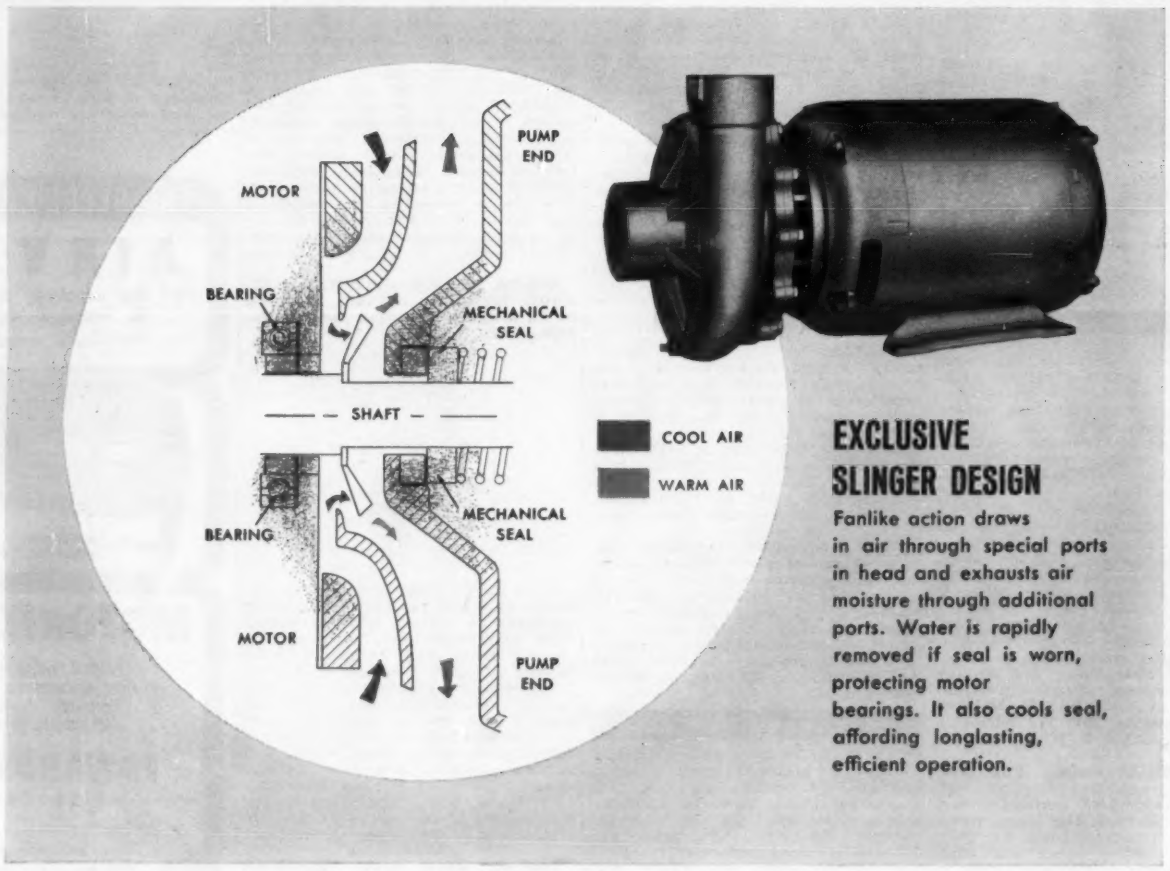
The extensive CRAC advertising and promotion program was launched in the fall of 1958 under the direction of a joint committee composed of Southern California air conditioning and refrigeration contractors and representatives of the Refrigeration Fitters, Branch Local No. 250, United Association.

Agency Administers Advertising

The advertising approach is professionally administered through the advertising agency of McNeill, McCleery & Cochran of Los Angeles.

In addition to direct advertising appeal, the program also places heavy emphasis on the training of a greater number of young men to provide qualified service and installation personnel for the industry, it was pointed out.

NEW DUNHAM-BUSH A9 CENTRIFUGAL PUMPS PROVIDE 2-WAY PROTECTION AT DANGER ZONE



EXCLUSIVE SLINGER DESIGN

Fanlike action draws in air through special ports in head and exhausts air moisture through additional ports. Water is rapidly removed if seal is worn, protecting motor bearings. It also cools seal, affording longlasting, efficient operation.

Now Dunham-Bush offers a complete line of close coupled centrifugal A5 and A9 pumps for far reaching applications.

The new heavy duty, quality A9 pump expands the Dunham-Bush centrifugal pump line to 51 size standard models . . . 1750 or 3450 RPM, high capacity and head . . . plus non-standard pumps with special impellers.

Dunham-Bush A9 pumps contain built-in safety factors comparable to that of the pipe and fittings; components designed for heavy duty use; seals for temperatures up to 250°; case held to head with 12 bolts; discharge connection that can be rotated to 12 different positions.

Get full details of the sensational new Dunham-Bush A9 and A5 pumps. Request bulletins 1440A and 1442.

Dunham-Bush, Inc.

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AIR CONDITIONING • REFRIGERATION • HEATING • HEAT TRANSFER